THE 1980 INVESTIGATION OF THE MONTE CREEK ARCHAEOLOGICAL SITE (EdQx 15)

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A report submitted to the Heritage Conservation Branch, Ministry of Provincial Secretary and Government Services, on archaeological research carried out under permit # 1980-11.

March 30, 1981

SYNOPSIS

This report is concerned with the 1980 archaeological investigation of the Monte Creek site (EdQx 15), a large prehistoric village near Kamloops, B.C. The site was purchased in 1978 by the Government of British Columbia to protect the site from imminent destruction due to land alterations which were being undertaken by the landowner. This research represents the initial step in the development of a long range management plan for the site by the Heritage Conservation Branch of the B.C. Ministry of Provincial Secretary and Government Services. The intent of this research was to provide a brief assessment of the site's scientific and educational potential, and to satisfy 2 specific objectives: (1) to assess the present condition of the site, and (2) to determine the age and cultural affiliation of the archaeological deposits.

The field work took place in the summer of 1980. Sixteen cultural depressions at the site were tested including 2 rectangular house pits, 2 circular house pits, 8 buried house pits, 3 exterior cache pits, and 1 possible oven feature. Excavations recovered 306 indigenous and 191 Euro-american artifacts; 3137 pieces of lithic detritus; one partial human cranium; 61 identifiable botanical specimens; 697 identifiable and 5095 unidentifiable faunal remains; 30

features, including 12 house pits, 6 refuse and/or storage pits, 2 ash hearths, 7 rock features including hearths, ovens, and scatters, 1 post, and 2 post holes; and more than 100 kg of fire-altered rock.

Excavations and background research revealed that at one time the Monte Creek site consisted of 78 cultural depressions of various sizes and covered an area of 4550 m^2. Erosion, ranching, road and building construction, and bulldozing have impacted large areas of the site, so that today only 18 cultural depressions are still visible. Thirty-nine of the vanished depressions, however, were buried in 1976, and remain more or less intact below surface; only 21 cultural depressions have been totally destroyed or almost so. The amount of damage varies considerably depending on the size and location of the depression, but no size, shape, or location of cultural depression managed to avoid at least some minor disturbance. Approximately 46.8% of the original archaeological deposits at the site are estimated to still be intact.

Seven radiocarbon dates place the aboriginal occupation of the site from about 1900 to 200 years ago. This residency was, in all likelihood, sporadic and seasonal. Artifact styles, faunal remains, and house types indicate that 3 archaeological units are represented at the site. The earliest Thompson phase component is estimated to date from ca. 1900 - 1400 years B.P. At this time the site

consisted of a small village set back from the river on a low knoll. The later Kamloops phase component dates from 1400-200 years ago. At least 5 separate Kamloops phase settlements are present at the site, each consisting of a village of unknown size next to the river's edge. During the Historic period (post A.D. 1825), the site was used primarily as pasturage for cattle by Euro-american ranchers.

An examination of the site's scientific significance and potential concluded that, while additional archaeological research could still be carried out at the site, such an undertaking would probably not make a substantial contribution to our understanding of local and regional prehistory. Similarly, there was no evidence to indicate that the site could make an important contribution to paleoenvironmental or other scientific studies.

The site's potential for enhancing public understanding and appreciation of the human past also seems to be quite limited. This conclusion was based on a consideration of site condition, difficulties with access, and attitude of the local community towards possible development of the site into a public use park.

Three recommendations are proposed as a result of the research. These are: (1) No additional archaeological research should be carried out at the Monte Creek site at this time; (2) The Monte Creek site should not be developed

into a heritage and public education park; and, (3) The Heritage Conservation Branch should consider development of a heritage park somewhere else in the greater Kamloops-South Thompson area.

ACKNOWLEDGEMENTS

This project has been made possible through the efforts of many persons and by assistance from several institutions. The background research, field work, and some aspects of the laboratory analysis was funded by a contract with the B.C. Ministry of Provincial Secretary and Governmental Services, arranged through the offices of the Heritage Conservation Branch. Cariboo College supplied the field equipment and laboratory facilities, provided secretarial and drafting assistance, and salaried the principle investigator. The B.C. Ministry of Labour funded 2 student assistants for part of the summer through the Youth Employment Program. A research grant from the Social Sciences and Humanities Research Council of Canada supported Stephen Lawhead while he wrote appendix III.

Administrative support for this project was provided by Ray Kenny, Heritage Conservation Branch; A. James Wright, vice-principal (Education), Cariboo College; and Clifford Neufeld, controller, Cariboo College.

The students of the 1980 Cariboo College archaeology field school are to be thanked for serving as the field crew for this project. They are: Bruce Buchanan, Margaret Grip, Marcia Horricks, Anna Louis, Lisa Millar, Joanna Nagel, Jerry Pettyjohn, Sigrid Phillips, Heather Smith,

Anita Sondergaard, Bryan Wells, and Linda Wilson. Melanie Carfantan served as research assistant and laboratory supervisor. Jacqueline Klingele volunteered her services for part of the field season. Dennis Lock and Robert Lum provided daily transportation between the college and the site.

The residents of Monte Creek followed our work with interest and assisted us whenever they could. I especially wish to thank Fred and Claire Bell, Louis and Anna Marie Bezdec, Wayne Everett, Dariel Hill, Ross McIlvenna, and Fred and Violet Nichol.

I also wish to acknowledge the assistance of Abbey Bates, Michael Blake, Arthur Charlton, Bernice Foard, Danny Foard, and Derek Wales during our background research. Of special mention is the cooperation provided by former landowner, Larry Chmielewski, who spent several days at the site, answering our questions and pointing out various features of the property.

Technical assistance and advice was gratefully received from several individuals. They include: Randy Bouchard, B.C. Indian Language Project; Susan Crockford, B.C. Provincial Museum; John Cartwright, Fish and Wildlife Branch, B.C. Ministry of the Environment; Dorothy Kennedy, B.C. Indian Language Project; James Miller, Department of Social Sciences, Cariboo College; Dr. Vince Osborne, B.C.

Ministry of the Environment (Kelowna); Stan Rowe, Forintek Canada Corporation; Dr. June Ryder, Terrestrial Studies Branch, B.C. Ministry of the Environment; Dr. Kenneth Taylor, Department of Physical and Life Sciences, Cariboo College; Dr. Mark Taylor, Department of Physical and Life Sciences, Cariboo College; Dr. Albert van Ryswyk, Kamloops Research Station, Agriculture Canada; and David Williams, Department of Physical and Life Sciences, Cariboo College. Their contributions are discussed in the report.

Several people have read early drafts of this report, or parts thereof, and I appreciate their comments and suggestions. They include: Randy Bouchard, John Cartwright, Dorothy Kennedy, Stephen Lawhead, Tom Richards, Michael Rousseau, Dr. June Ryder, Dr. Kenneth Taylor, and David Williams. I am, of course, solely responsible for the content of this report and for any errors which it may contain.

Pat Howe typed the final draft of this report; Jerry Pettyjohn drew the line drawings and drafted all maps.

Lastly I want to especially recognize Stephen Lawhead's contribution to this report. He authored appendix III and also served as an astute editor. He read several versions of this manuscript and made numerous suggestions, many of which were incorporated into the report. His support and assistance is much appreciated and is greatly acknowledged.

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1. INTRODUCTION

The Monte Creek archaeological site is a large prehistoric native village near Kamloops, B.C. At one time, the site consisted of at least 78 cultural depressions representing the remains of semi-subterranean houses, storage pits, earth ovens, and, possibly, underground tunnels. In 1976, the owner of the site property initiated a series of construction and land altering activities which resulted in the disturbance or destruction of as many as 60 of the cultural depressions. The likelihood of additional land alterations by the landowner and their adverse impact on the site led the Heritage Conservation Branch of the Ministry of Provincial Secretary and Government Services to propose site purchase as the appropriate mitigative measure. In October of 1978 the Government of British Columbia purchased the site with funds provided equally by the British Columbia Heritage Trust and the Ministry of Recreation and Conservation. Now, the Heritage Conservation Branch wants to undertake an assessment of the research and educational potential of the site so that a long-range management plan can be developed.

As the initial step in this assessment, the writer undertook a 3-month field investigation of the Monte Creek site in the summer of 1980 under contract with the B.C.

Ministry of Provincial Secretary and Government Services. The work was carried out under permit #1980-11. Preliminary documentary research and field preparation took place in April of 1980 and the bulk of the field investigation occurred in May and June in conjunction with the Cariboo College archaeological field school under the instruction of the writer. Funds provided by the Youth Employment Program of the B.C. Ministry of Labour supported the concluding field work by a small crew in the month of July. Analysis of the data and preparation of this report has occupied the writer along with his teaching duties at Cariboo College from September 1980 to February 1981.

This report describes the activities that were undertaken and discusses the results of that research. The report consists of 7 sections plus 3 appendices. The first section gives a brief background to the project and outlines the organization of the report. Sections 2 and 3 provide a thorough environmental and culture-historical description of the study area, focusing especially on the subsistence and settlement practises of the local ethnographic inhabitants and on the local archaeological sequence. Section 4 discusses the project's research objectives and research plan and section 5 reconstructs the original size and structure of the Monte Creek site and provides an assessment of present site condition. The age and cultural affiliation

of the site are addressed in section 6. The final section of the report, section 7, offers a brief assessment of the educational and scientific potential of the site and makes several recommendations regarding further archaeological work.

Appendix I lists the data sources consulted in the background research phase of this study. Appendices II and III constitute the descriptive site report. Appendix II discusses the excavations and stratigraphy and appendix III, authored by Stephen Lawhead, describes all the recovered archaeological materials. An extensive bibliography completes the report.

is partly filled with Pleistocene and Recent glacial, lacustrine, and fluvial gravels, sands and silts. Post-Pleistocene dissection of the floor of a late-glacial lake by the South Thompson River has resulted in the formation of a broad alluvial plain at an elevation of 350 m with benchlike remnants of lacustrine silts along both valley walls. Alluvial fans of reworked silt and mudflow gravel are a common feature of this area as are deeply incised tributary streams.

In the vicinity of the site, the valley walls consist of steep cliffs of predominantly green andesitic lava belonging to the Upper Triassic Nicola Group. The moraine-covered uplands behind these cliffs are composed predominantly of dissected basalt lavas and flow breccias of the Tertiary Kamloops Group (Jones 1959:Map 1059A; Buchanan 1977:Fig. 2). Here the alluvial plain is about 700 m wide and consists of a floodplain and low terraces flanked by lacustrine benches on both sides (Buchanan 1977). At the base of the terrace scarps are several alluvial fans which have been constructed upon the floodplain as a result of mudflows and floods issuing from gullies in the lacustrine silts.

EdQx 15 is located on the southern river bank and consists of a level area and a low knoll. The former area is part of the floodplain and is underlain by fine sandy loam and silt loam sediments. Ryder (1980) thinks that

these sediments are either of aeolian and backchannel origins, or are an inlier of late-glacial lacustrine sediments with a fine aeolian mantle. An area of fine fluvial sand was noted in the river bank at the western end of the site but, in general, overbank sediments appear to be absent, probably due to a low concentration of suspended materials in flood waters. The knoll in the central part of the site is underlain by massive, poorly-sorted fluvioglacial gravels of many different lithologies with a veneer of finer sediments. This slightly elevated area occupies about 0.45 ha and protrudes between 3 and 4 m above the almost flat floodplain. The gravels outcrop in the river bank and extend partly across the river as a broad gravel bar. A shallow channel, well watered with seepage, runs across the site at the western foot of the knoll.

2.3 Soils

The soils of the Monte Creek locality are primarily brown chernozems (Lord and Valentine 1978:Fig. 3.2.1; Valentine and Dawson 1978:130). A visual inspection of several soil exposures on the property by Dr. A. van Ryswyk indicated that, due to the constant ground water provided by the South Thompson River, the soils of the site could best be described as gleyed brown chernozems with an Ah, oxidized B, Cg, and Ccag horizon sequence. Ryder (1980) thinks that

seepage from irrigation on higher elevations to the south of the site may be responsible for the gleying of the soil on the knoll, because the well-drained underlying gravels would negate the effects of a high watertable through reduced capillary action. At both ends of the site the soils are solodized and support a salt-tolerant vegetation dominated by giant wild rye. Gypsum, carbonates, magnesium salts, and sodium salts are probably the major alkalies present but this needs to be confirmed by chemical analysis.

2.4 Climate and Vegetation

The Monte Creek locality lies within the Ponderosa Pine-Bunchgrass biogeoclimatic zone (B. C., Dept. of Lands, Forests, and Water Resources n.d.). The climate is semi-arid, mid-latitude steppe characterized by short cold winters, long hot summers, and low precipitation. At Kamloops airport the mean monthly temperatures for January and July are -5.9°C and 20.9°C respectively with a mean annual precipitation of 246.63 mm (Canada, Department of Transport 1967).

Originally the site was covered by native grasses such as bluebunch wheatgrass, rough fescue, Sandberg bluegrass, and needle-and-thread grass (Jones and Annas 1978; Brayshaw 1970; McLean and Marchand 1968) but overgrazing by cattle (Tisdale 1947) and the recent sowing of alfalfa and

dryland pasture grasses has drastically altered the grassland vegetation. Wild mustard now covers much of the site while giant wild rye grows in wet areas along the river bank.

On the site, along the river's edge, grow black cottonwood, red hawthorn, snowberry, wild rose, Russian olive, thinleaf alder, trembling aspen, and the occasional ponderosa pine. Douglas maple, red hawthorn, and domestic apple occupy the well-watered seepage channel.

There is also, in the vicinity of the site, western white birch, willow, western choke cherry, big sagebrush, pasture sage, and prickly-pear cactus. The nearby terraces and hills support stands of ponderosa pine, hazelnut, and Douglas-fir on the lower slopes, and Engelmann spruce and lodgepole pine at higher altitudes. Table 1 lists the scientific names of the plants mentioned in the text.

2.5. Fauna

An extensive fauna inhabits the grasslands and the forests of this area (Table 2). Major species include mule deer, moose, beaver, black bear, coyote, wolf, red fox, bobcat, lynx, cougar, porcupine, striped skunk, yellow badger, long-tailed weasel, yellow-bellied marmot, snowshoe hare, and bighorn sheep (Cowan and Guiguet 1965). Northern pocket gophers are common in the valley and their extensive

TABLE 1.

Common and scientific names of selected plants of the study area.[1]

TREES AND SHRUBS	
Douglas maple	*Acer glabrum* var. *douglasii*
thinleaf alder	*Alnus tenuifolia*
Saskatoon berry	*Amelanchier alnifolia*
big sagebrush	*Artemisia tridentata*
western white birch	*Betula papyrifera* var. *commutata*
hazelnut	*Corylus cornuta* var. *californica*
red (Columbia) hawthorn	*Crataegus columbiana*
Russian olive	*Elaeagnus angustifolia*
strawberry	*Fragaria virginiana*
Engelmann spruce	*Picea glauca* subs. *engelmannii*
lodgepole pine	*Pinus contorta* var. *latifolia*
ponderosa (yellow) pine	*Pinus ponderosa*
trembling aspen	*Populas tremuloides*
black cottonwood	*Populus trichocarpa*
western choke cherry	*Prunus virginiana* var. *demissa*
Douglas-fir	*Pseudotsuga menziesii*
domestic apple	*Pryus malus*
gooseberry	*Ribes irriguum*
willow	*Salix* spp.
snowberry (waxberry)	*Symphoricarpos albus*
dwarf huckleberry	*Vaccinium caespitosum*
mountain huckleberry	*Vaccinium membranaceum*
blueberry	*Vaccinium ovalifolium*
HERBACEOUS PLANTS	
wild onion	*Allium cernuum*
pasture sage	*Artemisia frigida*
balsam root	*Balsamorhiza sagittata*
spring beauty	*Claytonia lanceolata*
dog-tooth violet	*Erythronium grandiflorum*
bitterroot	*Lewisia rediviva*
wood lily	*Lilum columbianum*
bisquit root	*Lomatium dissectum* and *L. macrocarpum*
prickly-pear cactus	*Opuntia fragilis*
cinquefoil	*Potentilla anserina*
wild rose	*Rosa nootka* and *R. woodsii*
wild mustard	*Sinapsis arvensis*
water parsnips	*Sium suave*

TABLE 1. Continued

GRASSES	
bluebunch wheatgrass	*Agropyron spicatum*
giant wild rye	*Elymus cinereus*
rough fescue	*Festuca scabrella*
alfalfa	*Medicago sativa*
Sandberg bluegrass	*Poa secunda*
needle-and-thread grass	*Stipa comata*
LICHENS	
"black moss" (witch's hair)	*Alectoria jubata*

[1] Scientific names after Bailey (1949), Frankton and Mulligan (1970), Hitchcock et al. (1955-69), and Hubbard (1969).

TABLE 2.

Common and scientific names of selected animals of the study area.[1]

LAND MAMMALS	
British Columbia moose	*Alces alces andersoni*
coyote	*Canis latrans*
wolf	*Canis lupus*
American beaver	*Castor canadensis*
elk (wapiti)	*Cervus canadensis*
porcupine	*Erethizen dorsatum*
cougar	*Felis concolor*
snowshoe hare	*Lepus americanus*
Canada lynx	*Lynx canadensis*
bobcat	*Lynx rufus*
yellow-bellied marmot	*Marmota flaviventris*
striped skunk	*Mephitis mephitis*
long-tailed weasel	*Mustela frenata*
Mule deer	*Odocoileus hemionus*
bighorn sheep	*Ovis canadensis*
mountain caribou	*Rangifer tarandus*
yellow badger	*Taxidea taxus*
northern pocket gopher	*Thomomys talpoides*
American black bear	*Ursus americanus*
red fox	*Vulpes fulva*
BIRDS	
pintail	*Anas acuta*
mallard	*Anas platyrhynchos*
teals	*Anas* spp.
great blue heron	*Ardea herodias*
scaups	*Aythya affinis* and *A. marila*
Canada goose	*Branta canadensis*
Bufflehead	*Bucephala albeola*
goldeneyes	*Bucephala* spp.
mergansers	*Lophodytes cucullative* and *Mergus* spp.
American widgeon	*Mareca americana*
whistling swan	*Olor columbianus*
grebes	*Podiceps* spp.
shoveler	*Spatula clypeata*

TABLE 2. Continued

FISH	
longnose sucker	*Catostomus catostomus*
white sucker	*Catostomus commersoni*
largescale sucker	*Catostomus macrocheilus*
prickly sculpin	*Cottus asper*
ling	*Lota lota*
peamouth chub	*Mylocheilus caurinus*
coho salmon	*Oncorhynchus kisutch*
sockeye salmon	*Oncorhynchus nerka*
kokanee	*Oncorhynchus nerka*
chinook (spring) salmon	*Oncorhynchus tschawytscha*
mountain whitefish	*Prosopium williamsoni*
northern squawfish	*Ptychocheilus oregonensis*
redside shiner	*Richardsonius balteatus*
rainbow trout	*Salmo gairdneri*
dolly varden char	*Salvelinus malma*
lake trout	*Salvelinus namaycush*

1 Scientific names after Cowan and Guiguet (1965), Carl et al. (1967), and Peterson (1961).

burrowing has disturbed many local archaeological sites.

Mule deer and moose were almost unknown in the south-central interior prior to their territorial expansion in the middle of the 19th century. Mountain caribou have abandoned the southern interior and the once common elk has now almost vanished possibly due to aboriginal overkill during the last 100 years (Brooks 1945:25-7; Teit 1909:513).

The South Thompson River supports a large migratory waterfowl population including whistling swans (a wintering species), Canada geese, great blue herons, and a large number of ducks such as scaups, buffleheads, mergansers, mallards, and goldeneyes. Nearby lakes and ponds are home to migratory grebes and ducks including pintails, teals, widgeons, and shovelers. Numerous species of resident game birds, birds of prey, and various small birds complete the bird life of the valley (Kamloops Naturalist Club checklist of Kamloops birds 1974).

The fish of the South Thompson River and nearby lakes include the anadramous sockeye, coho, and chinook salmon as well as a variety of freshwater species such as kokanee, mountain whitefish, rainbow trout, largescale sucker, longnose sucker, white sucker, prickly sculpin, lake trout, dolly varden char, redside shiner, northern squawfish, peamouth chub, and ling (Carl et al. 1967; Kennedy and Bouchard 1975; Cartwright 1980).

Salmon run annually in the South Thompson River with major sockeye runs occurring every fourth year. Modern sockeye runs exceed one million fish in peak years (TNRD Planning Report 1975:24) but were undoubtedly larger prior to commerical river-mouth fishing, water pollution, logging, the Hell's Gate slide, and dam construction (e.g. Balf 1978:2). Chinook salmon first appear in the river in early June with sockeye and coho salmon ascending the river at various times between September and early November (Cartwright 1980). Before the destruction of the Upper Adams run, sockeye first entered the river in early August (Cartwright 1980). Monte Creek is an important salmon spawning ground (Kennedy and Bouchard 1975:2-3) and the river bank along the site is known today as a good fishing location.

Two types of freshwater mussels are also to be found in the South Thompson River: Margaritifera margaritifera and Anodonta grandis.

2.6. Paleoenvironments

The inhabitants of the Monte Creek site probably lived in a habitat similar but not identical to that of today. As will be discussed in section 6.3., the site was first occupied about 1900 years ago and was not abandoned until late prehistoric times. Studies of local gulley

down-cutting and infilling (Fulton and Armstrong 1965) and of alluvial fan formation (Ryder 1971) indicate that modern drainage and landforms were well established prior to the initial occupation of the site but evidence for changing rates of creek degradation suggest that fluctuations in precipitation did take place in the past.

Alley (1976a) has proposed a Holocene climatic model for the south-central interior of British Columbia in which a major period of alpine glaciation occurred between 3200-2200 years ago (Battle Mountain advance) and during the last thousand years (Mammoth Creek advance). The latter was characterized by 2 maxima, one at 1000-800 years ago, and another during the last 300 to 400 years. During periods of ice advance, climatic conditions were presumably somewhat cooler and/or wetter than today, whereas conditions were slightly warmer and/or drier than present during the intervening periods.

An alternative model has been proposed for this area by Duford and Osborn (1978) in which Alley's Mammoth Creek advance is replaced by the brief Raft Mountain stade. This stade dates to the last few centuries. Duford and Osborn also see no evidence for the Battle Mountain advance but they think that there might have been a short-lived advance (Spahats Creek stade) sometime between 1600-240 years ago.

Whatever the final outcome of this debate may be, it

appears relatively certain that during the occupation of the site the highlands around the study area experienced at least one climatic deterioration corresponding to the Raft Mountain stade and the recent maximum of the Mammoth Creek advance. A second climatic deterioration may have taken place sometime between 1200-800 years ago, corresponding to the earlier Mammoth Creek peak and to the possible Spahats Creek advance.

The effect of these climatic changes on the ecology of the South Thompson valley remains to be determined but they probably would have included fluctuations in temperature and precipitation, shifts in plant distributions, changes in runoff and the discharge of the South Thompson River, changes in the rates of aeolian activity and gulley erosion or infilling, and fluctuations in the level of the water table. Although the scale of these changes are not certain, it is unlikely that they were of great magnitude (Denton and Karlen 1973:155).

Palynological profiles from bogs and lakes in this area show few signs of major vegetational shifts during this period (e.g. Mack et al. 1978, Fulton and Armstrong 1965) although minor changes appear to have occurred. Increases in birch, alder, and hazelnut at the Kelowna Bog in the Okanagan valley may correspond to the Battle Creek and Mammoth Creek advances (Alley 1976b) but this correlation

is tentative. During periods of increased moisture the tree line would have migrated down slope at the expense of the open grasslands and sagebrush, while trees such as willow, alder, birch, aspen, and hazelnut would have been more common. The reverse would, of course, have occurred during the intervening periods of decreased precipitation.

All this suggests that, although many of the details of the local paleoenvironments still need to be worked out, environmental conditions have not changed significantly over the last two millenia. Presumably, a prehistoric inhabitant of the Monte Creek site would have little difficulty in recognizing the South Thompson valley as it is today.

3. CULTURE-HISTORICAL SETTING

3.1. Ethnography

When Euro-american exploration of the southern interior of British Columbia began in the early 1800s, an estimated 13,000 native people lived in this vast area (Duff 1965:39). The spoke various dialects of Shuswap, Lillooet, Thompson, and Okanagan, which are four closely related languages of the Interior Salish branch of the Salishan language family. These people were semi-nomadic hunters, gatherers, and fishermen and occupied the northern sub-area of the Interior Plateau culture area (Ray 1939:147).

The South Thompson valley lies within the traditional territory of the Shuswap people. Two bands, each speaking a dialect of Shuswap, lived in the valley: the Stkamluleps or Kamloops band claimed the western part and had their major post-contact settlement at the site of the present-day village at the confluence of the North and South Thompson rivers (Teit 1909:461), whereas the eastern section of the valley belonged to the South Thompson band who wintered at the village of Halaut a few kilometers below the outlet of the Little Shuswap Lake (Teit 1909:461). The approximate dividing line between the two territories seems to have been about 3 km east of Monte Creek at a rock bluff known today

as the "lion's head" (Bouchard 1981). The occurrence of place names in both the Kamloops and the Chase (Eastern) dialect of Shuswap (Bouchard 1981) in this vicinity may indicate, however, that the Monte Creek locality was occupied and utilized by both bands and was a transition zone between the two territories. The ethnographies make no mention of a village at Monte Creek but members of the South Thompson band did occasionally winter as far west as Ducks (Monte Creek) (Teit 1909:461, note 6).

Exact population counts are not available for the Shuswap for the early contact period. Teit (1909:465-466), however, estimates that the Kamloops and South Thompson bands numbered about 550 and 400 people, respectively, prior to the drastic population declines of the second half of the 19th century.

No attempt was made to systematically record the vanishing lifeways of the local native people until the last three decades of the 19th century when several brief accounts of Shuswap ethnography were published. These included general overviews (Boas 1890a, 1890b, 1895; Dawson 1891), and discussions of language (Gibbs 1877, Tolmie 1877), mythology (Boas 1891), and physical anthropology (Boas and Farrand 1898). The major Shuswap ethnography was not to come until 1909 when James Teit published The Shuswap under the auspices of the Jesup North Pacific Expedition.

The next six decades witnessed only minor contributions to Shuswap ethnography (e.g. Schmidt 1929, 1934; Smith 1912; Teit 1930), two notable exceptions being the synthesis of Plateau culture and the Plateau culture element list published by Verne Ray (1939, 1942). Interest in Shuswap ethnography was recently revived with the work of Randy Bouchard and Dorothy Kennedy of the B.C. Indian Language Project on Shuswap language (Bouchard 1973a, 1973b), mythology and ethnography (Bouchard and Kennedy 1979), fishing practices (Kennedy and Bouchard 1975), and ethnobotany (Bouchard and Turner 1974). Gary Palmer recently investigated Shuswap cultural ecology (1975a) and ethnobotany (1975b) and James Gibson (1973) studied the Chase dialect of Shuswap. Unfortunately the potential for future ethnographic field work in the South Thompson area is somewhat limited as several of the more knowledgeable informants have recently died (Bouchard 1981).

A comprehensive description of Shuswap ethnography can be found in Teit (1909) with shorter accounts and overviews in Dawson (1891), Sanger (1968:127-130), Jenness (1977:351-358), Palmer (1975b), and others. For this report, it is the material expression of traditional Shuswap subsistence, settlement, and technology that is of particular importance, and will be summarized based primarily on Teit (1909), Dawson (1891), Boas (1890a), Palmer (1975a,

1975b), and Kennedy and Bouchard (1975).

Shuswap territory has been characterized as an heterogenous environment with limited food resources which are widely dispersed and seasonally variable (Palmer 1975b). In response, the Shuswap developed a flexible but balanced subsistence strategy which mixed specialization with diversification and which, in the South Thompson area, relied primarily on elk, deer, Pacific salmon, Saskatoon berries, and dog-tooth violet roots (Palmer 1975b:200-1). Diversification resulted in the exploitation of a great many other plants and animals while flexibility permitted reliance on secondary species in times of need.

Deer and elk inhabit grassy valleys and forest edges (Palmer 1975b:213), making the South Thompson area well suited for ungulate hunting (Palmer 1975b:218). The largest hunts took place in the late fall when the deer were in rut. Elk, deer, and caribou were hunted by individual hunters, small hunting parties, and larger communal groups (Teit 1900:239-248; 1909:518-521). Other animals hunted or snared included marmots, hares, coyotes, lynx, foxes, bears, and beavers (Teit 1900:249; 1909:522-523). Waterfowl and other birds were also sought (Teit 1900:230; 1909:513, 519-520) and dogs were eaten in times of famine (Teit 1909:517).

The people of the South Thompson valley fished the river and nearby lakes and streams from early March to late

November (Kennedy and Bouchard 1975). They started the year with ice fishing for whitefish, and concluded with the important fall harvest of Pacific salmon. In spring and summer the lakes, streams, and river were fished for Kamloops trout, peamouth, squawfish, redside shiner, sucker, and sculpin (Kennedy and Bouchard 1975). Fish were harpooned, speared with three-pronged leisters, gaffed, caught in basketry traps and double weirs, and hooked by trolling and straight line (Kennedy and Bouchard 1975; Teit 1909:524-530; Dawson 1891:15-17). The first two methods were often accompanied by pit-lamping (Kennedy and Bouchard 1975).

Fish were cooked by boiling, steaming in a basket or pit, or barbecuing (Kennedy and Bouchard 1975). Five different techniques were used to butcher fish which were then preserved by either smoking or air drying (Kennedy and Bouchard 1975). Dried fish required for daily winter use was stored on elevated platforms whereas food cached in case of famine or for consumption at the end of the winter was kept in underground pits heaped with dirt (Kennedy and Bouchard 1975; Teit 1909:495). Freshwater mussels were not eaten except in times of need (Teit 1909:513).

The South Thompson Shuswap utilized at least 48 species of plants for food, including 21 species for berries, 14 for roots, 5 for nuts and cones, and 3 for shoots and greens (Palmer 1975a:35). Saskatoon berries and dog-tooth

violet roots were the major plant foods of the area, with spring beauty, wild onion, wood lily, bitterroot, bisquit root, cinquefoil, prickly-pear cactus, black moss, water parsnip, balsam root, hawthorn berry, chokecherry, gooseberry, strawberry, blueberry, and several types of huckleberries being other important foods (Palmer 1975a:37). Roots and shoots were generally collected in the spring although a few species were obtained in the fall. Berries ripened throughout the summer and early fall depending on species, altitude, and the incidence of fire.

Roots were prepared by steaming in an earth oven or boiling (Palmer 1975a:38-9; Teit 1909:516-7; Dawson 1891:9) and were dried for winter consumption. Berries were either eaten fresh, often as a mixture which had been soaked and mashed, or made into storeable cakes by boiling and drying (Teit 1909:516; Palmer 1975a:39).

Because of the scattered and seasonal nature of the local food resources, the South Thompson Shuswap followed a semi-nomadic annual round characterized by sedentary, but not necessarily permanent, winter settlements in the main river valley and shifting temporary camps at different resource locations throughout the rest of the year. Small conical lodges of mats were erected at the temporary camps although square and oblong structures of bark or brush may also have been occasionally used (Teit 1909:493). Long

double lodges were built at fishing stations and elsewhere to accommodate large numbers of people (Teit 1909:493).

Winter dwellings were occupied from November or December until February or early March (Teit 1900:194; 1909:518) and were of two types. The more widely used pit house consisted of a circular, flat-bottomed excavation covered by a low-pitched conical roof of wood which was chinked with grass and insulated by a layer of stamped earth. The roof was waterproofed by an optional layer of bark followed by a capping of fine silt or clay (Teit 1900:194; 1909:492-493; Condrashoff 1980; Dawson 1891:7-8). Regional and, possibly, familial variations in construction have been noted for the Shuswap (e.g. Boas 1890a:632-634; Condrashoff 1974, 1980) although Boas' account may be incorrect (Hill-Tout 1978:note 11).

Discrepant estimates exist in the ethnographic literature as to house size. Pit diameters seem to have ranged from about 3 to 20 meters (Boas 1890a:633; Hill-Tout 1978:57-58; Teit 1900:192; Dawson 1891:7) and each would have housed from 15 to 70 related people, depending on the size of the excavation (Teit 1900:193; Condrashoff 1980; Hill-Tout 1978:58).

Entry was by a notched log ladder through an opening in the center of the roof, the same opening serving as a smoke hole for the rock or log-contained fire near the base

of the ladder (Teit 1900:194; Condrashoff 1974). Side entrances in the form of short, narrow tunnels have also been reported for Shuswap pit houses (Condrashoff 1980; Thomas 1980) but their frequency is not known. These tunnels may have served as entrances for women and children, as escapes in times of danger, or as easier ways of bringing firewood and other supplies into the house (Condrashoff 1980; Thomas 1980).

Tule mats, bulrush mats, and conifer branches covered pit house floors (Teit 1900:190; Hill-Tout 1978:58). Food storage pits were sometimes dug into house floors in the quarter closest to the nearest source of water (Teit 1909:493). The wedge-shaped space formed by the lower portion of the sloping roof and the flat shelf around the pit's circumference was used for the storage of food, firewood, and other commodities.

A second type of winter dwelling, which combines some of the features of the summer mat lodge with that of the pit house, has been reported for the ethnographic Shuswap by Boas (1890a:634-635) and Condrashoff (1974). It consists of a mat or bark covered A-frame set over a square or rectangular excavated pit with rounded corners, the pit measuring about 0.5 meters deep, 3.5 meters long, and 2.5 meters wide (Boas 1890a:635). Earth may have been banked around these lodges or a double layer of matting may have been used (Teit

1909:493). The frame poles were placed entirely outside the pit at both ends of the lodge, creating a storage shelf between the pit and the lodge wall (Condrashoff 1974). The sides of the pit may have been shored with logs and stakes (Condrashoff 1974) and entry was through one of the slightly rounded ends (Boas 1890a: 634-635). Presumably there was a central hearth and the floors were covered with mats or boughs, but these details have not been recorded.

An occupied pit house would last about 20 years if refurbished each fall (Condrashoff 1980). Unfortunately, no estimates are available for the life expectancy of a winter mat lodge. Apparently, enthographic winter villages were normally quite small with seldom more than 3 or 4 dwellings at one location (Condrashoff 1974; Teit 1900:192). This means, of course, that larger social groups such as the Kamloops and South Thompson bands must have occupied several small villages in any single winter. A typical winter village would have consisted of one or more dwellings, several underground food storage pits heaped with earth, elevated caches for the storage of food and equipment, circular earth ovens, and, possibly, outdoor cooking hearths. Just beyond the village would have been one or more menstrual isolation huts built like miniature pit houses, and dome-shaped sweat-houses covered with earth (Teit 1909:495), possibly accompanied by a hearth for the heating of sweat-house stones.

Traditional Shuswap technology consisted of a relatively large inventory of tools, skills, and concomitant knowledge. Artifacts were made on a variety of locally-available materials and on the occasional piece of exotic stone or shell. Volcanic basalt was the most frequently used stone, other lithics being chert, jasper, chalcedony, and obsidian (Teit 1909:473). Hematite and quartz crystal were two important utilized minerals. Animal and plant products including bones, antlers, teeth, shells, hides, bark, roots, wood stems, and fibres were also commonly used (Teit 1909:473-491). Palmer (1975a:35) noted that the South Thompson Shuswap utilized at least 37 plant species for technological purposes and the animal list may have been just as long.

Stone artifacts were primarily made by direct percussion flaking, pressure flaking, and pecking, with grinding and incising limited to softer stones and the occasional piece of slate. The organic materials were worked with the standard gamut of stone-age techniques including cutting, chopping, chisling, drilling, boiling, adzing, and incising. Copper was occasionally cold hammered in pre-contact times.

Tools were usually small, light, and portable. Exceptions such as boulder mortars were probably not intended to be moved. The Shuswap tool-kit consisted of various special-function implements including stone-tipped hand drills,

antler and hardwood splitting wedges, deer antler flaking billets and pressure flakers, bone needles and awls, stone and antler woodworking adzes, and groved sandstone arrow-shaft smoothers. Their tool-kits also included a large number of multi-purpose tools such as stone, bone, and beaver-tooth knives; flake and boulder spall scrapers; dense stone pestles; hammerstones; hardwood stakes and pegs; sandstone grinding stones; and ground scraping, cutting, and adzing celts (Teit 1909:473-474).

With these tools, Shuswap men and women attended to their need for food, shelter, clothing, and transportation. They developed an extensive material culture in perishable materials such as animal hides, plant fibres, bark, and wood and some of their finest works such as stitched bark baskets, coiled spruce and cedar-root baskets, woven mats and nets, and ornamented deerskin clothing were made in these media. Unfortunately, these materials are seldom recovered archaeology.

3.2. History

Even though the Shuswap had abandoned the Monte Creek site prior to the arrival of the first Europeans in the South Thompson valley, a brief summary of the events which took place in the study area during the post-contact period seems warranted as it will assist in the dating and

interpretation of the late pre-historic and historic remains at the site. This summary makes no claim of historical completeness; a more comprehensive account of local history can be found in Balf (1969).

Artifacts of iron were introduced into the South Thompson area "early in the middle of the eighteenth century" (Teit 1909:475), more than 50 years before the arrival of the first Europeans. These objects came from the Pacific coast through traditional exchange networks but were scarce among the southern Shuswap until after the establishment of Thompson's River post (Fort Kamloops) in 1812. Horses also preceeded the Europeans and were first used by the southern Shuswap around 1780 (Teit 1909:533). These were obtained from the Upper Thompson and Okanogan who got them from various Salishan and Sahaptin groups to the south (Boas 1890a: 637; Teit 1900:257; 1909:533; 1930:249). The Shuswap may have had horses several decades earlier if Kirk and Daugherty's (1978:70) date of 1730 for the introduction of horses onto the Columbia Plateau is valid. Although no longer rare by 1808, Shuswap horses were not plentiful until about 1840 (Teit 1909:533). Regular access to horses had a marked impact on native mobility, changing traditional trading, visiting, hunting, and marriage practises, and opening the Shuswap to greater cultural influences from the southeast (Teit 1930:253).

Although the South Thompson Shuswap had already heard about the Europeans by the beginning of the nineteenth century (Dawson 1891:26), actual contact did not occur until 1811. Thompson's River post was constructed at the confluence of the North and South Thompson rivers and became the focus for Shuswap-Europeans relations for the next 50 years. Fisher (1977:47-48) considers the fur trade period as a time of cultural co-existence in which both the Indians and the Europeans benefited economically without drastically altering the native way of life. Balf (1969:3; 1978:4-5), on the other hand, has noted that it was during this period that native dependence on non-aboriginal goods and foods began. At this time traditional subsistence practices were also disrupted, due to the new emphasis on the trapping of fur bearing animals and on the selling of dried salmon to the Hudson Bay post.

The discovery of gold along the Fraser River in 1858 and in the Cariboo and elsewhere in the early 1860s lead to a massive influx of Euro-americans into the southern interior which had a drastic impact on the Shuswap. Introduced diseases such as smallpox, measles, tuberculosis, scarlet fever, and whooping cough devastated the southern Shuswap, especially during the smallpox epidemic of 1862-63. These diseases led to a disastrous population decline which may have been as high as two thirds (Teit 1909:463), and which

was not checked until the late 1800s (Duff 1965:39, 44-45). Starting in 1867, missionaries established churches and schools which avidly suppressed Shuswap religious practices and the Shuswap language. A notable exception was Father Le Jeune who started a native language newspaper (Zeh 1906; Balf 1969:51; Le Jeune 1925).

Newly arrived merchants, farmers, ranchers, government officials, and other settlers had little need for the traditional Indian (Fisher 1977) and often found themselves in competition with native people for land and access to timber and other resources. Indian affairs became the responsibility of the colonial government in 1858 and of the federal government in 1871. The first Shuswap reserves had been established by 1862 and Teit (1909:469-472) claims that the Shuswap were generally willing to adopt European ways, including religion and wage labour. This lead to greater wealth among the more acculturated bands but it also resulted in a higher incidence of alcohol addiction and law violation (Teit 1909:472).

It was during this period of cultural upheaval and enormous population decline that the first accounts of Shuswap ethnography were written. It is not clear to what degree these reports may have been influenced by the many changes which were taking place. Both Boas (1890a:632) and Teit (1909:469-470) comment on the great number of

traditional practises which had almost entirely disappeared among the Shuswap at the time of their field work, especially when compared with the more conservative Thompson. Palmer (1975a:46) has argued, however, that the early ethnographers must have witnessed many traditional aspects of Shuswap culture and that they must have had access to numerous elderly and knowledgeable informants. A more conclusive assessment of the ethnographic record still needs to be undertaken, and archaeological examination of late prehistoric and early historic native sites could assist in this evaluation.

The Monte Creek locality is first mentioned in the historic record in the early fur trade journals where it is known as "la montie" (Balf 1969:123). The fur brigades travelled up Monte Creek in the 1820s and 1830s (Balf 1969: 10) but these early journals make no mention of any native settlement in this area. In the 1850s, Alphonse Matteo, who was the first European settler in the area squatted along the mouth of Monte Creek. In 1862, Jacob Duck and Alex Pringle pre-empted land on both sides of the South Thompson River in the vicinity of Monte Creek, including the Monte Creek site. They constructed a roadhouse which fluorished during the Big Bend goldrush of 1865 (Balf 1969:123) and it was during this period that the community of Monte Creek had its genesis. The fledgling community was greatly augmented

by the construction of the Canadian Pacific Railway tracks in 1885. In 1888 much of the land in the vicinity of Monte Creek was purchased by Hewitt Bostock whose descendants still ranch in this area.

The Monte Creek site remained in the possession of the Bostock family until 1962 when it was included in a land sale to Frank and Audrey Wittner. One year later, however, A. E. Bostock bought the area around EdQx 15 so that she could donate it to the provincial government for an historic park. This offer was not accepted by the government and, in 1974, the site property was sold to Vallis Holdings Inc.. Ownership of the site was transferred to Wayne Everett in 1975 and to Larry Chmielewski the following year. Lastly, in 1978, the site was purchased by the Government of British Columbia.

3.3 Archaeology

Archaeological investigations in the South Thompson valley can claim a long but sporadic history marked by momentary bursts of field work interspersed with long lapses of inactivity. The 1970s were an especially productive decade, so much so that it has become possible in the last few years to begin to critically assess the archaeological and historical models which have been proposed for this area. Nevertheless, our present understanding of the regional archaeology is still in its infancy and we can expect

considerable alterations to that understanding as additional research is undertaken.

3.3.1. Previous Field Work

The first archaeological field work undertaken in the study area took place in the late 1890s when H. I. Smith of the Jesup North Pacific Expedition excavated four late prehistoric and historic burial sites on the Kamloops Indian Reserve (Smith 1900). Although these excavations lacked adequate control by modern standards and were not thoroughly described in Smith's report, this pioneering work did, nevertheless, provide an initial insight into late prehistoric and historic native burial practices.

An hiatus of more than 50 years followed Smith's work. Then, in 1960, a crew from the University of British Columbia excavated part of a disturbed burial mound (EeQw 1) near Chase (Sanger 1968). Five flexed interments of late prehistoric age were recovered and it was proposed that the Chase mound be the type site for a new archaeological unit to be known as the Kamloops phase (see below).

The first excavations of a village site in this area occurred in 1969 when Morley Eldridge and Michael Blake tested the Pemberton site (EeQw 64, formerly EeQw 2) near Pritchard (Eldridge and Blake 1971). A small artifact assemblage attributable to Sanger's Kamloops phase was

recovered.

Between 1971 and 1973, Robert Wilson conducted salvage excavations at 7 sites in the vicinity of Kamloops (Wilson 1973, 1974, and 1976). At the Harper Ranch site (EdRa 9), Wilson defined three distinct occupations corresponding to the Proto-historic period, the preceeding Kamloops phase, and an even earlier and previously unknown phase which he named the Thompson phase (see below) The gigantic Kamloops Reserve site (EeRb 3) yielded a large Thompson phase assemblage as did the smaller Van Male village (EeRb 10). The phase affiliation of EeRb 10 has recently been questioned, however (see below). Both the Kamloops and the Thompson phase were represented at the Leonard village site (EeRb 11).

At the LaFarge site (EdRa 11), 24 km east of Kamloops, Wilson tested 4 small food storage pits which yielded little material. Wilson also salvaged a single flexed burial in a buried Thompson phase(?) house pit(?) at EeRc 8 (Brocklehurst burial site) and salvaged a flexed, undated burial at the Tranquille School site (EeRd 3).

In 1972, Sharon Johnson-Fladmark conducted excavations at two village sites between Pritchard and Chase (Johnson-Fladmark and Steward 1972, Johnson-Fladmark 1973). At the Green Acres site (EeQw 6), she tested several cultural depressions, salvaged an infant burial, and

excavated a rock cairn. An extensive Kamloops phase component as well as a more restricted Proto-historic or Historic occupation were present (Johnson-Fladmark 1973:16-9). Two large depressions tested at a large village (EeQw 15) on Banana Island were assigned to the Kamloops phase. Johnson-Fladmark also tested a small unstratified site (EeQw 22) located on a high bluff overlooking the valley and recovered a small assemblage which could not be assigned to any phase.

Also in 1972, Morley Eldridge directed excavations at two stratified sites near Pritchard (Eldridge 1974). Deep subsurface deposits at EeQw 14 spanned the last 2000 years and represented the remains of a buried house pit along with a later camp (Eldridge 1974:iii, 36-9). At the Moulton Creek village site (EdQx 5) Eldridge recognized two periods of occupation separated stratigraphically by a layer of volcanic ash which presumably came from the Mount St. Helen's eruption of about 3200 years ago (Fulton 1971:18-9). All material from above the ash was assigned to the early Kamloops phase, whereas the cultural material from below the ash belonged to an as yet unnamed archaeological unit.

In 1973, Brent Hoy and Gordon Mohs recorded 8 heritage sites in the vicinity of Monte Creek including the Monte Creek site (Mohs and Hoy 1973). The following year Michael Blake undertook salvage excavations at the Rocky Point village site (EdQx 20), located half way between

Pritchard and Monte Creek. Blake (1974, 1976) noted a Thompson phase (which he called Lillooet phase) and Kamloops phase component at the site.

A partial human skeleton was removed from underneath a layer of Mazama volcanic ash in a slumped exposure along Gore Creek (EeQw 48) near Pritchard in 1975 (Hanson 1975; Cybulski et al. 1980). Radiocarbon dating produced an age estimate of 8250±115 years B.P. (Cybulski et al. 1980). Unfortunately, the skelton was not intact and no cultural materials were found with the remains.

More recently, in 1977, Catherine Carlson tested two village sites just east of Kamloops (Carlson 1978). At the Curr site (EdRa 22), test excavations revealed an extensive Thompson phase occupation along with a smaller Kamloops phase component. At EeRa 4, Carlson tested a Thompson phase house pit.

In 1978, Gordon Mohs undertook a systematic survey of the entire South Thompson valley, recording 192 heritage sites (Mohs 1978). The following year he salvaged an isolated and undated burial (EeQw 97) near Chase (Mohs 1980).

In 1980, two projects took place in the study area. The first was the Monte Creek excavations discussed in this report. The other was a small-scale testing program carried out by Tom Richards and Michael Rousseau at 5 sites threatened with destruction on the Kamloops Indian Reserve

(Richards and Rousseau 1980). At EeRb 10, where Wilson had excavated earlier, the investigators concluded that the site was older than suggested by Wilson. They assigned the cultural material to an as yet unnamed phase which predates the Thompson phase (Richards and Rousseau 1980:115; Richards 1981).

Excavations at EeRc 21 and EeRb 67 indicated that all depressions except one were non-cultural. The cultural depression was a small food storage pit of unknown age. A medium-sized depression at EeRc 20 and two large pits at EeRb 64 turned out to be early Thompson phase habitations (Richards and Rousseau 1980:117). An Historic component is present at EeRb 64, EeRb 67, and EeRc 20. Richards and Rousseau are continuing their investigations through the 1980-81 winter, intending to fully excavate a large pre-Thompson phase depression at EeRb 10 (Richards 1981).

Just east of Chase lies the western Shuswap basin, an area of narrow valleys occupied by a chain of rivers and lakes. Although not part of the immediate study area, we should note 3 archaeological projects which have taken place there because they provided archaeological data directly relevant to the South Thompson valley.

In 1971, John Sendey tested several depressions at an unnamed village site (EfQu 3) in the Shuswap Lake Provincial Park (Sendey 1972). Two components were recognized: a

house pit occupation of uncertain phase affiliation which may have included the 8 flexed burials uncovered at the site, and a pre-house pit component which also was not attributable to any named phase.

In 1972, Sharon Johnson-Fladmark excavated two village sites in the western Shuswap basin. Three rectangular depressions at the large Tate site (EfQv 19) were attributed to the Kamloops phase and 4 large cultural depressions at EfQv 5 along the Adams River produced a small lithic assemblage which could not be assigned to any archaeological unit.

Lastly, and further afield, we should note Mohs' 1980 excavation of a large rectangular depression at EdQs 14 near Enderby. It contained a single Kamloops phase component as did a second disturbed depression which produced only a few artifacts (Mohs 1981).

3.3.2 Archaeological Chronology

One objective of much of this field work has been the construction of an archaeological chronology for the South Thompson valley. Most researchers working in the South Thompson area have followed the common North American practise of structuring their chronologies in terms of a sequence of archaeological phases and at least five phases have been proposed for the last 2000 to 3000 years in this

area. Nearly all of the excavated sites in this area can be assigned to one of these phases and those that cannot may be manifestations of a yet earlier and unnamed archaeological unit. The following discussion will review the various archaeological units which have been established for the South Thompson area.

The oldest archaeological remains presently known in the South Thompson valley are the human remains from Gore Creek (EeQw 48) and the pre-volcanic ash component at Moulton Creek (EdQx 5). Both sites predate the earliest phase yet defined for this area (see above). Unfortunately, no cultural material was found in association with the Gore Creek skeleton and the remains cannot be compared with sites of comparable antiquity elsewhere in western North America. The Moulton Creek component yielded a small but distinctive artifact assemblage which Eldridge (1974:74-5) thought as possibly belonging to Borden's Protowestern tradition.

This tradition subsumes a variety of regional "cultures" attribtued to the first inhabitants of southern British Columbia who entered both the interior and the coast from the south in terminal Pleistocene and early Holocene times (Borden 1979:964). These people hunted large and small game, collected wild plant foods, and ate freshwater mollusks but they did not fish or fowl. They used

leaf-shaped and stemmed bifacial knives and points, edge-battered and edge-ground cobbles, pebble and cobble choppers large cortex spalls, large blade-like flakes, gravers, and numberous types of end and sidescrapers (Sanger 1969:192; Borden 1969:8, 1979:964; Stryd 1973b:10-11).

Assemblages of the Protowestern tradition have been uncovered in several locations throughout the southern interior (e.g. Sanger 1969; Borden 1968; Grabert 1974). The small pre-house pit collection from EfQu 3 in the western Shuswap basin may also belong to this tradition (Stryd 1973b:10) but the presence of net sinkers in this component indicates that these people did engage in fishing.

In the period following deglaciation, the South Thompson valley may have been inhabited by people who participated in a widespread and generalized cultural tradition characterized by a food quest which focused on hunting and gathering rather than fishing, a year round nomadism, and a generalized tool kit. Although a terminal date has not yet been established for the Protowestern tradition in the South Thompson area, it seems that a regional and belated form of this tradition may have existed in the valley until at least 4000 years ago.

Sometime between 3000 and 2000 years ago, a marked cultural change appears to have taken place in the South Thompson valley involving changes in subsistence,

settlement, and technology. The exact nature and cause of these changes are not yet clear because so little is known about the local Protowestern cultures, but they may well have been associated with population movements into the study area. These new local cultures are similar to cultures along the mid-Fraser and lower Thompson drainage and may have originated there.

These new cultures form a 2000 to 3000 year continuum which is marked by a distinctive stone chipping technology; a reliance on hunting, plant collecting, and salmon fishing; a developed bone and antler industry; a woodworking tool kit; less nomadism than before; and residence in pit houses (Sanger 1969, 1970; Borden 1969, 1979). These cultures may be a late regional variant of Borden's extensive Early Boreal tradition (Borden 1969, 1979).

This 2000 to 3000 year continuum ends, in the South Thompson valley, with the ethnographic southern Shuswap. The continuum has been divided into several phases based on changes in artifact styles, dwelling forms, burial practises, and subsistence activities. As field work progressed in this area the number of phases increased and their defining characteristics were subjected to revisions. The first archaeological unit to be proposed was Sanger's late prehistoric Kamloops phase (Sanger 1968:146-9). In the 1970s, Wilson (1976:15-20) added to Sanger's definition of

the Kamloops phase and also introduced an earlier Thompson phase and a later Proto-historic period (or phase). An even more recent Historic phase was introduced by Blake (1976: 108, 116-9) although he never formally defined this unit. Carlson (1978:64-8) and Mohs (1978, 1980) have suggested several revisions to both the Thompson and the Kamloops phases and, in 1980, Richards and Rousseau (1980:115-8) proposed an as yet unnamed new phase prior to the Thompson phase. Five archaeological phases have now been proposed.

The unnamed pre-Thompson phase is the oldest Late Nesikep phase, dating sometime between 2000 and 3000 years B.P.. Exact dates are not known as no radiocarbon dates are yet available for the EeRb 10 which is the only example of this phase discovered so far in the South Thompson valley. Characteristics of this phase include large habitation depressions which are considerably larger than those of the subsequent Thompson phase and two types of dart or spear points: parallel stemmed points with straight or slightly concave bases and narrow shoulders, and side or corner-notched points with concave bases and bilateral "ears" (Richards and Rousseau 1980:115-118; Richards 1981).

The Thompson phase dates from ca. 2000 to 1400 years B.P. and is represented at 8 sites and by 7 radiocarbon dates in the study area. Traits characteristic of this phase include small (mean diameter = ca. 5.0 m.) and

circular, saucer-shaped house pits without ridges and often without benches, various types of corner-notched and barbed dart or spear points, spall tools, chipped stone drills, macroblades and microblades, a higher incidence of antler and crypto-crystaline tools than in the Kamloops phase, the use of the bow and arrow towards the end of this phase, and a greater reliance upon hunting over fishing (Wilson 1976: 18, 179, 181). Additional traits include clustered house pit villages (Mohs 1978:58-9), expanding and straight stemmed points, a higher incidence of endscrapers than in the Kamloops phase, wide spur (rounded) gravers, and various types of bifaces other than pentagonal forms (Carlson 1978: 64). Carlson (1978:64) and Lawhead (1978:25-29) have questioned the inclusion of microblades in this phase and Carlson (1978:64) saw no evidence for a greater emphasis on hunting during this period.

The well-documented Kamloops phase dates from 1400 to 200 years B.P. and has been recognized at numerous village, burial, and other sites in the study area. Fifteen radiocarbon dates have been obtained on local Kamloops phase assemblages but two-thirds of these date to the interval between 600 and 200 years ago. Traits characteristic of the Kamloops phase include large (mean diameter = 7.0 m) circular and oval house pits (often with high rims, steep walls, and benches), exterior cache pits (i.e. not within house

pits), side-notched arrow points including the Kamloops style point, a high incidence of bone tools, hand mauls, chipped stone pendants, ornamentation in bone and native copper, larger families and increases in population, greater emphasis upon riverine resources and large complex burial sites (Wilson 1976:19, 179-81). Sanger (1968:147-9) listed small asymmetric leaf-shaped points, pentagonal points (or bifaces), tubular trumpet pipes, jade celts with straight bits, carved hand maul tops, pecten shell rattles, steatite carvings, whalebone clubs, bear penis bone pendants, primary flexed pit burials in sandy soil, cist burials with rock cairns, a high incidence of antler digging stock handles, antler tine clubs and harpoon heads, and dentalium shell objects as characteristic of the Kamloops phase. Other traits include narrow spur (sharp) gravers, possibly improved pit house building techniques (Carlson 1978:64), square and rectangular pit dwellings, house pits with side entrances and interconnecting passageways (after ca. 1150 years B.P.), and linear house pit villages (Mohs 1978:42-9). Carlson (1978: 65-8) has questioned if we have sufficient data to conclude whether or not there was a population increase and a greater reliance on fishing during the Kamloops phase and at EdRa 22 she may have uncovered an exterior storage pit which is older than the Kamloops phase (Carlson 1978:42).

The Proto-historic period (or phase) dates from 200

to ca. 125 years B.P. (A.D. 1750-1825) and is characterized by the addition of a few non-native items to an otherwise Kamloops phase assemblage. Horses, glass beads, and various utilitarian items of iron are most commonly found in native sites of this period (Wilson 1976:20,180; Teit 1909:536). With the establishment of Fort Kamloops in 1812 the southern Shuswap obtained access to wider range of exotic goods such as woolen blankets, cloth, steel traps, flintlock muskets, iron axes and knives, tobacco, copper kettles, brass finger-rings, and brass bracelets (Teit 1909:537), so that the closing Proto-Historic date of ca. 125 years B.P. may have to be revised depending on how quickly and on what scale these objects were absorbed into Shuswap material culture. Changes in Shuswap subsistence practises also began at this time, especially the new emphasis on trapping fur-bearing animals and on selling dried salmon to the personnel of Fort Kamloops. Several village and burial sites excavated in the South Thompson area date to the Proto-historic period or contain a Proto-historic component.

Lastly, all heritage sites post-dating the Proto-historic period can be assigned to the Historic period. This would include both Shuswap and Euro-american sites and all artifacts manufactured during this period. Native dwellings and traditional stone, bone, and other artifacts became less frequent through the decades of the 1800s and by

the end of the 19th century had been almost totally replaced by Euro-american housing and objects. No aboriginal sites dating exclusively to this period have been uncovered so far in the South Thompson valley but several prehistoric and proto-historic sites contained Historic period trash.

4. OBJECTIVES AND RESEARCH PLAN

4.1. Objectives

The overall purpose of our work at the Monte Creek site was to provide data on the condition and culture-historical characteristics of the archaeological deposits so that a long-range management plan could be developed for the site. A brief assessment of the scientific and eductional potentials of the site was also included in the study. The contract established two specific objectives for the Monte Creek investigation. The first was to "assess the extent and location of disturbance and/or destruction that may have been caused during land alteration activities undertaken by the previous owner". The second objective was to "determine the extent, location, age, and cultural affiliation of the archaeological deposits".

During the development of the research design it became apparent that the first objective was too limited in scope. As worded, the assessment of site disturbance and destruction was to be restricted to that caused by the previous owner during land alterations. This would mean that the disturbance and destruction caused by the previous owner would have to be distinguished from that caused by all earlier owners, relic collectors, and other people, and this was often not possible. Such a restricted interpretation

of the first objective would also mean that the study would not result in an assessment of the overall present condition of the site since only the most recent land alteration could be considered. Because an understanding of the site's present condition would seem prerequisite to the development of any site management plan, the first objective was expanded in scope to an assessment of the present condition of the site. Such an assessment would, of course, have to consider the location and extent of all disturbances and destruction that may have occurred at the site since its abandonment, including those caused by the land alterations undertaken by the most recent owner.

For our purposes, the present condition of a site can be defined as the degree to which a site has maintained its original size and internal structure. This requires, of course, a knowledge of both the site's present and original size and internal structure so that the two may be compared. Several criteria for establishing site size and internal structure were considered at the start of the project but it soon became apparent that both site size and internal structure would have to be defined in terms of the cultural depressions at the site. This was necessary because often the only information available about the site from local residents, old site photographs, maps, site survey records, and archaeological reports were descriptions of cultural

depressions.

Because village sites usually consist of cultural debris and architectural remains which have accumulated over a period of time, the reconstruction of original site size is not normally an accurate indicator of village size at any one time. Our concern, therefore, is with site size rather than village size. Further, since the scope of the reseach was limited by contract to the property purchased by the Government of British Columbia, the determination of site size was by necessity confined to that part of the site which was located on the property. No attempt was made to expand the investigation beyond the boundaries of the property even though two cultural depressions had been reported on nearby private land and may have been part of the original site. For our purposes, the Monte Creek site consists of the archaeological deposits located on the purchased property.

4.2. Research Plan

A 3-stage research plan was employed. Background research and preliminary field reconnaissance comprised stage 1 whereas stage 2 consisted of the archaeological field and laboratory work. In stage 3, research results were evaluated, recommendations were formulated, and the report was prepared.

4.2.1. Stage 1

This initial stage in the research plan was intended to provide background data on the culture-historical and environmental setting of the study area as well as preliminary information on the size, internal structure, condition, history, age, and cultural affiliation of the site. Documentary research formed an important part of this initial work. Appendix I lists all the data sources which were consulted. Major activities and data sources included:

(a) Ethnographic, Ethnohistoric, and Historical Literature: both published and unpublished sources on local and regional ethnography, ethnohistory, and history were consulted for information on the local ethnographic inhabitants and for references to the Monte Creek site. The B.C. Indian Language Project in Victoria was especially generous in providing unpublished ethnographic information for the southern Shuswap.

(b) Archaeological Literature: both published and unpublished sources on local and regional archaeology were reviewed for references to the Monte Creek site and for discussions of the archaeology of the study area.

(c) Geological and Environmental Literature: various sources were consulted on the geologic history, paleoenvironments, and modern environment of the study area in general and the Monte Creek locality in particular.

(d) Archaeological Site Inventory Forms: the Monte Creek site was initially recorded in 1973 by Mohs as four distinct sites. These were numbered EdQx 13-16. In 1978 Chisholm and Mohs gave the site one number, EdQx 15. The 1973 site inventory forms for EdQx 13-16 and the 1978 form for EdQx 15 were examined for specific information on former site size and internal structure.

(e) Maps: in addition to the sketch maps which were appended to the site inventory forms, 4 maps of the Monte Creek site drawn between 1974 and late 1976 were consulted for data on former site size and internal structure. Of special importance was a scale map prepared in April of 1976 by the B.C. Ministry of Transportation and Highways (The BCH map). This map played a vital role in our attempt to define original site size and to locate cultural depressions which had been buried or otherwise obscured during the most recent land alterations. The BCH map also provided information on depression size which was invaluable in our reconstruction of internal site structure and in the formulation of the sampling design (see below). Another site map which was frequently consulted was a sketch map drawn on March 15, 1976, by Arthur Charlton (the Charlton map) which showed the extent of disturbance which had taken place at the site in the spring of that year.

(f) Aerial Photographs: seven sets of aerial

photographs taken of the Monte Creek locality by the Surveys and Mapping Branch of the Ministry of the Environment between 1948 and 1974 were checked for information on river bank erosion, the location of cultural depressions, and the location of former buildings on the site property.

(g) Photographs: a composite color photograph of the site taken by Arthur Charlton in July of 1976 provided information on site condition at that time.

In addition to documentary research, stage 1 activities included interviews, examination of private collections, and a preliminary site reconnaissance:

(a) Interviews: individuals with knowledge of the site were interviewed when possible. Information on the original size and internal structure of the site and on previous land alterations was especially sought. Sixteen people were contacted, including former land owners, local residents, amateur collectors, officials of the Heritage Conservation Branch, and anthropologists and archaeologists who had visited the site (appendix I). Furthermore, important data on local geology, pedology, botany, zoology, geomorphology, and palynology were obtained as a result of discussions held with researchers in these desciplines at Cariboo College, the B.C. Ministry of the Environment, and Agriculture Canada (appendix I).

(b) Private Collections: 3 private artifact

collections containing objects from the Monte Creek site were viewed (appendix I) and, in one case, partially photographed. The possibility of time-sensitive and diagnostic artifact types in these collections was of special interest as they would help assess site age and cultural affiliation. The Dennis Chmielewski collection warranted special attention because the provenience of most of the specimens was known.

(c) Preliminary Field Reconnaissance: several site visitations took place in April and early May of 1980 to assess the condition of the site. The location, size, and condition of all extant cultural depressions were noted and preliminary site mapping was initiated. Several interviews with local residents, amateur collectors, and former land owners were held at the site so that accurate plotting of locational data would be possible. Photographic coverage of the site was also undertaken at this time and involved both aerial and ground photography in color and black-and-white. Oblique infrared aerial photography was tried experimentally to see if this technique could detect buried cultural depressions by identifying areas of differential heat radiation but only differences attributable to variations in surface vegetation were noted.

4.2.2. Stage 2

Archaeological field and laboratory research

comprised the second stage of the research plan. This work provided data on site age and cultural affiliation and was instrumental in checking reports on the location of former cultural depressions and in evaluating the condition of individual cultural depressions. Stage 2 activities included site mapping, systematic surface collecting, archaeological testing, and preliminary analysis of recovered material:

(a) Site Mapping: a small-scale contour map of the purchased property was prepared using a Watts microptic alidade and plane table. The map provides a two-dimensional representation of the site and locates all extant cultural depressions, modern structures, iron pins, posts, roadways, and trees (Fig. 2). A one-meter contour interval was employed and cultural depressions were numbered in accordance with the BCH map. Depressions not shown on the BCH map were numbered sequentially following 41, the last number used on the BCH map. Final cartographic drafting was done by student Jerry Pettyjohn during phase 3 of the project.

(b) Surface Collecting: a systematic surface collection was conducted over the southern portion of the knoll for the purpose of student training and obtaining archaeological materials which might be indicative of site age or cultural affiliation. The presence of considerable cultural debris on the knoll made this part of the site suitable for such an undertaking. The rest of the site was not collected

due to a lack of surficial material in the eastern and western parts of the site and to the possibility of significant lateral displacement of cultural material in the northern portion of the knoll where extensive disturbance and destruction has taken place.

The entire southern knoll was covered in our collection except for a narrow strip along the eastern periphery. An area of 1460 m^2 was collected (Fig. 3). The site grid was used for delimiting the collecting area and for recording all observed items. A systematic foot traverse of the entire area was employed and materials were recorded and collected within 5 x 5 m grid units. The results of the surface collection are included in appendix II.

In addition to systematic collection of the knoll, isolated surface artifacts from other parts of the site were recorded and collected when observed. These artifacts are also included in appendix II.

(c) Archaeological Testing: controlled archaeological testing was the major component of stage 2 of the research plan. The testing program was intended to provide archaeological objects, dateable samples, and architectural data which would help determine site age and cultural affiliation (objective 2). Testing also played an important role in the assessment of site condition (objective 1); specifically, it was necessary for assessing the condition of extant

cultural depressions, for checking reports of former cultural depression locations, and for determining the condition of cultural depressions which are still partially intact but which are no longer evident on the surface.

Because it was not possible to excavate the entire site nor was it necessary in order to satisfy both research objectives, a limited testing program was initiated. This required, of course, the selection of an excavation sample. This task was made more difficult by the fact that the excavations had more than one objective; however, a single multipurpose sampling strategy was eventually designed. The sampling terminology follows that of Kish (1965).

Excavation sampling is a type of area sampling and, therefore, requires spatial units for sampling elements. The cultural depression was selected as the obvious sampling element and the target population (about which information was wanted) consisted of all cultural depressions once in existence at the Monte Creek site. Since it would not be possible to list all the elements in the target population, a more restricted survey (or sample) population was defined. It consisted of all cultural depressions on the site property as shown on the BCH map as well as three buried depressions clearly outlined in the road cut and several small surficial depressions which were apparently overlooked when the site was surveyed for the BCH map. Fifty-two cultural

depressions comprise the survey population.

Preliminary background research and field reconnaissance indicated that the survey population was heterogenous. The cultural depressions varied in size and shape, and the BCH map showed three distinct spatial clusters of depressions. Furthermore, an inspection of artifacts from EdQx 15 in private collections suggested a possible two-millenia time span for the site with different parts of the village dating to different time periods. In order to assure that these variations would be represented in our excavation sample, the survey population was divided into several subpopulations or strata. Four criteria were chosen for the construction of the strata: culture depression size, shape, and location, and whether or not the cultural depression was visible surficially.

Cultural depression shape: cultural depressions were either circular (including oval) or rectangular (including square) in plan. Unfortunately, the BCH map makes no mention of depression shape and only the 18 extant cultural depressions could be checked for shape. All were circular in plan except for three rectangular depressions. The Charlton map shows buried cultural depression 11 (c.d. 11) as having a trough-like depression located tangentially to its rim and this unique feature was given special consideration in the construction of the sampling design.

Cultural depression size: information on cultural depression size was obtained from the BCH map and by measuring extant depressions. The length of the longest horizontal dimension measured from mid rim was used (the "diameter"). Depth generally correlated with "diameter" and was treated as a redundant attribute. The cultural depressions ranged in "diameter" from 1.40 to 11.89 m and when all measurements were plotted on a frequency polygon (Fig. 4), three groups were evident: small depressions with "diameters" of less than 6.5 m, medium depressions with "diameters" between 6.5 and 9.5 m, and large depressions with "diameters" in excess of 9.5 m. The survey population consisted of 33 small, 8 medium, 10 large, and one undeterminable cultural depressions.

It should be noted that a base-line (abscissa) interval of 1.0 m was employed in the construction of the frequency polygon in Fig. 4, with score values expressed as mid-points between whole numbered lower and upper interval limits. This means, for example, that the one-meter interval between 5.0 and 6.0 m is expressed on the graph as 5.5 m. When a base line interval of less than one meter was tried, the resulting distribution was too dispersed to be practical for the sampling design. When an interval value of two meters was used, the distribution was not discriminatory enough for sampling purposes.

Cultural depression location: the BCH map clearly shows three spatial groupings of cultural depressions which we labelled the western, central, and eastern clusters. Unfortunately the validity of these three clusters was not tested statistically. Nevertheless, the distinction between the central and western clusters is probably meaningful as a shallow channel separates these two areas. The distinction between the central and western clusters, however, may not be valid. Prior to the recent land alterations, the central cluster may have been part of a larger eastern cluster because the badly disturbed intervening area once contained cultural depressions. On the other hand, this separation may be valid because dated depressions from the central area are considerably older than the tested depressions of the eastern cluster. The recognition of three clusters assured that depressions from all parts of the site would be represented in the excavation sample. The three clusters consisted of 16 (eastern), 9 (central), and 27 (western) depressions.

Cultural depression visibility: the fourth stratification criterion divided the survey population into two categories based on whether or not the cultural depressions were visible surficially. This distinction was made so that both the extant surficial depressions and the buried cultural depressions would be included in the sample. Nineteen

cultural depressions were surficially visible whereas another 33 were not.

The preceeding four stratification criteria include two 2-category and two 3-category variables which could potentially divide the survey population into 36 subpopulations or strata (2 x 2 x 3 x 3). Only 14 strata were actually established, however, as not all possible combinations of variables were encountered. The sampling elements for all 14 strata are listed in Table 3.

A non-probabilistic judgment sampling procedure was used in selecting the sampling elements for the excavation sample. Probability sampling was rejected because no statistical statements were wanted about the survey population and no statistically adequate sample size could be obtained in the time available. Furthermore, in order to obtain a worthwhile probabilistic sample, a second sampling stage would have been required in which the aggregate of excavation units within each cultural depression would have been sampled since each cultural depression could not have been excavated fully. Such an undertaking was not possible, however, because of our inability to list all the sampling elements (i.e. excavation units) in the buried cultural depressions. These considerations led to the adoption of a purposive procedure in which a careful examination and stratification of the population elements was combined with

TABLE 3.

Frame of sampling elements per stratum, elements selected per stratum, and elements tested.

Sampling Stratum #	Sampling Stratum Description	Stratum Elements N	Stratum Elements C.D.#	Elements Selected N	Elements Selected C.D.#	Elements Tested C.D. #
1	Western cluster, small, circular, visible	9	1,2,4-6, 12, 47-49	1	1	1
2	Western cluster, small, shape?, not visible	10	8-10,13-15, 17, 21-23	0	-	-
3	Western cluster, medium, rectangular, visible	1	7	1	7	7
4	Western cluster, medium, shape?, not visible	1	20	1	20	-
5	Western cluster, large, circular, visible	1	3	1	3	3
6	Western cluster, large, shape?, not visible	4	16, 18, 19,	1	19	19
7	Western cluster, large, shape?, with side entrance, not visible	1	11	1	11	11
8	Central cluster, small, circular, not visible	2	42, 44	1	42	42
9	Central cluster, medium, shape?, not visible	5	25-28, 43	1	25	25-28
10	Central cluster, large, shape?, not visible	1	24	1	24	24 (45)*
11	Eastern cluster, small, circular, visible	5	38,41,46,51, 52	1	41	41
12	Eastern cluster, small,shape?, not visible	7	29,30,32,34-37	0	-	-
13	Eastern cluster, medium, shape?, not visible	2	31,33	1	33	-
14	Eastern cluster, large, rectangular, visible	2	39,40	1	39	39

* C.d. 24 turned out to be c.d. 45 (see appendix II).

a judgment selection of "typical" elements from each stratum.

Two strata involving small buried depressions (strata #2 and 12) were deleted from the survey sample at this point because of the probability of not being able to locate such small features when they are buried. Stratum #8, which also deals with small buried depressions, was not dropped only because the two members of this stratum could be seen in the road cut. Because of uncertainty as to how many depressions could be tested, only a single cultural depression was selected for investigation from each of the 12 remaining strata. Four strata (#3, 4, 5, and 7) consisted of a single depression which automatically became part of the sample. For strata #1 and 11 the best defined depression was selected and the selection from the other strata (#6, 8, 9, 10, 13, and 14) was arbitrary, Table 3 identifies the cultural depressions which were choosen from each stratum.

Due to a shortage of time, only 10 of the 12 selected cultural depressions were actually tested (Table 3). Also, three additional depressions from stratum #9 were briefly investigated due to confusion in the field regarding the sampling design. In total 14 cultural depressions were tested: (c.d.s 1,3,7,11,19,25,26,27,28,39,41,42,45 and 53) and 2 depressions were faced (c.d.s 24 and 46).

Lastly, at least one 1 x 2 m excavation unit was

placed in each selected cultural depression except for c.d.s 3 and 28 which were only auger tested. Additional excavation units were dug in five of the cultural depressions (c.d.s 7, 11, 19, 39, and 41). The number of excavation units and their placement was governed by the writer's assessment of the most efficient and effective means of acquiring the relevant archaeological information, and the conditions varied from depression to depression. The placement of the excavation units is briefly discussed for each cultural depression in appendix II.

Standard archaeological excavation techniques were used in the research. Five iron survey pins served as permanent horizontal and vertical datum points (Fig. 2). A metric site grid was used to record horizontal provenience and all depth measurements were tied into an arbitrary elevational plane for the site. Excavation units usually measured 1 x 2 m and were dug in 10 cm thick arbitrary levels although stratigraphic levels were occasionally used. Fill was removed using square-nosed shovels and mason trowels and was screened through 6.35 mm (1/4") mesh. Field records and daily notes detail the field work and a photographic coverage was maintained of the excavations in both color and black-and-white. Stratigraphic section drawings were made for all excavation units and sediments samples were taken from the various stratigraphic layers.

A fence post auger with a 22 cm-diameter bit was used experimentally to help determine the depth, stratification, and horizontal location of subsurficial cultural deposits. This technique worked best when used in areas where the basic subsurficial stratigraphy was already known, where rocks were minimal, and where the various layers were easily differentiated visually. This approach was limited to deposits less than one meter in thickness due to the length of the auger bit. Mixing of cultural material was minimized by drilling in constant increments and checking each segment of fill. Stratigraphic sections were recorded by inspecting the side of the auger holes with the aid of a flashlight and sediment samples were taken when required.

A total of 18 auger holes were drilled. This technique successfully confirmed the existence of buried c.d.s 27 and 28 and was able to locate the edges of buried c.d.s 11, 25, 26, and 27. This was the only investigative technique used in c.d.s 3 and 28.

(d) Preliminary Analysis: this refers to a variety of related activities concerned with the curation and basic analysis of the archaeological materials which were recovered. Materials were cleaned, sorted, catalogued, and given preliminary identification while the field work was still in progress. Final identifications were subsequently supplied by several specialists: Stan Rowe of Forintek

Corporation in Vancouver identified wood species, Susan Crockford of the B.C. Provincial Museum identified faunal remains, and David Williams of Cariboo College identified the plant remains.

Materials were also counted, measured, and tabulated with the help of research assistant Melanie Carfantan and student Lisa Miller. Tests for sediment pH and conductivity were carried out by student Marcia Horricks. More complex tests were conducted on a set of selected sediment samples by staff from the B.C. Ministry of the Environment in Kelowna. Lastly, seven charcoal and wood samples suitable for radiocarbon age determination were dated at Simon Fraser University. These activities concluded stage 2 of the research plan.

4.2.3. Stage 3

In this final stage of the research plan, the information obtained in stage 2 was evaluated in terms of the project's two research objectives. Standard analytic methods were used in both the assessment of site condition and in the determination of site age and cultural affiliation. The problem of appropriate criteria for measuring site condition was briefly addressed in section 4.1. Estimation of site age was largely based on seven radiocarbon dates and on the presence of time-sensitive artifact types,

architectural features, and settlement characteristics. Cultural affiliation was determined by comparing the recovered material and settlement characteristics with the diagnostic attributes of the local archaeological sequence. This sequence was defined earlier in section 3.3.2..

A brief assessment of the site's educational and scientific potential was also undertaken following guidelines provided by the Heritage Conservation Branch (B.C. Ministry of Provincial Secretary and Government Services, 1981). Recommendations regarding future research at the site were also made. These recommendations are, of course, a subjective evaluation of such research needs.

The production of this report concluded the project. The manuscript was prepared using an AES word processor.

5. ASSESSMENT OF SITE CONDITION

5.1. Introduction

The first objective of the research at Monte Creek was to provide an overall assessment of the present condition of the site, with present condition being defined as the degree to which the site has maintained its original size and internal structure. Because counts, descriptions, and locational data for cultural depressions were often the only information available about the site from local residents, collectors, and documents, the cultural depression was selected as the only practical unit with which to express site size and internal structure.

Two criteria were selected for determining both past and present site size: (1) the total number of cultural depressions at the site, and (2) the total area, in square meters, occupied by the cultural depressions. Areas between adjacent cultural depressions were included in the calculation of site area but large open areas devoid of depressions, such as the drainage channel, were excluded. Although subjective, this criterion was consistently applied.

For internal site structure, the spatial distribution of different types of cultural depressions within the site was selected as the defining criterion. These types are based on various combinations of depression size, shape,

and location, as discussed earlier in section 4.2.2. (c).

In this section, we will reconstruct as accurately as possible the original site size and internal structure, provide a history of natural and cultural events which have disturbed or otherwise impacted the site, and assess the present condition of the site.

5.2. Original Site Size and Internal Structure

Based on background research and archaeological field work, the Monte Creek site probably consisted at one time of at least 78 cultural depressions. Eighteen of these depressions can still be seen surficially today, and the existence of another 9 buried or partly destroyed depressions were confirmed archaeologically. Local residents, collectors, site maps, aerial photographs, site inventory forms, and other documentary sources mentioned in section 4.2.1. provided the information for the other cultural depressions. Presumably, these depressions are not visible surficially because they have been buried or destroyed. A lack of time prevented us from testing all of them archaeologically. Different sources, notably maps, were checked against one another to confirm the former existence of some of these depressions, but conflicting size measurements and locational data frustrated much of this effort.

Because the existence of most of the 78 cultural

depressions are supported by two or more independant sources of information, it is highly unlikely that this count is too high. It is possible, however, that this total may be somewhat low. Small, poorly defined depressions are easily overlooked when mapping and they are impossible to spot on aerial photographs. This would be less of a problem, of course, with larger depressions.

One long-time local resident claims that several large and small depressions slumped into the river more than 30 years ago as a result of undercutting of the river bank during seasonal high water. The presence of thick arboreal vegetation along the river's edge makes it impossible to confirm this using aerial photographs. Numerous artifacts have been collected by local residents from the "beach" at the base of the river bank, however, indicating that archaeological deposits have been eroding into the river. The partial destruction of c.d.s 12 and 46 confirms that at least some river bank erosion has taken place, but its rate and impact on the site is not known.

Table 4 lists the 78 cultural depressions which once made up the Monte Creek site and Fig. 5 reconstructs the original site layout. It should be noted that two very small and ill-defined depressions (c.d.s 47 and 51) may not be cultural and that c.d. 12 may not be aboriginal. According to one local resident, c.d. 12 was roofed and used

TABLE 4.

Cultural depressions of original EdQx 15.

C.D. #	Description of C.D.[1]	Estimated % Intact[2]	Major Sources[3]	Comment
1	small, circular, 2.31 m diameter[4], 0.31 m deep, rim 0.15 m high	95	E, M, BCH	intact
2	small, circular, 1.50 m diameter, 0.31 m deep, no rim	95	M, BCH	intact
3	large, oval, 9.9 x 11.1 m, 1.22 m deep, rim 0.46 m high	60	E, M, BCH	intact but disturbed by relic collecting
4	small, oval, 3.3 x 4.2 m, 0.31 m deep, no rim	95	M, BCH	intact
5	small, oval, 2.80 x 3.10 m, 0.31 m deep, common rim with c.d. 6, rim 0.30 m high	95	M, BCH	intact
6	small, circular, 2.80 m diameter, 0.31 m deep, common rim with c.d. 5, rim 0.30 m high	95	M, BCH	intact
7	medium, rectangular, 8.7 x 9.2 m, 0.90 m deep, rim 0.62 high, rounded corners	80	E, M, BCH	partially filled 1976, calf burial, extensive rodent burrowing
8	small, shape?, 2.81 m "diameter", 0.46 m deep, rim 0.31 m high	25?	BCH	buried or destroyed 1976
9	small, shape?, 3.05 m "diameter", 0.61 m deep, rim 0.31 m high	25?	BCH	buried or destroyed 1976
10	small, shape? 2.81 m "diameter" 0.46 m deep, no rim	25?	BCH	buried or destroyed 1976
11	large, shape?, 11.58 m "diameter", 1.52 m deep, rim 0.62 m high	60	E, BCH, CM	buried 1976
12	small, oval, 3.00 x 5.30 m, 1.30 m, deep, no rim	30	M, BCH, I	partially destroyed by river bank slumpage, possibly not aboriginal
13	small, shape?, 2.81 m "diameter", 0.31 m deep, no rim	25?	BCH	buried or destroyed 1976
14	small, shape?, 3.05 m "diameter", 0.46 deep, rim 0.31 m high	25?	BCH	buried or destroyed 1976
15	small, shape?, 2.44 m "diameter", 0.46 m deep, rim 0.31 m high	25?	BCH	buried or destroyed 1976
16	large, shape?, 10.93 m "diameter", 1.22 m deep, rim 0.62 m high	60?	BCH	buried or destroyed 1976

TABLE 4. Continued

C.D. #	Description of C.D.[1]	Estimated % Intact[2]	Major Sources[3]	Comment
17	small, shape?, 3.05 m "diameter", 0.61 m deep, rim deep, rim 0.31 m high	25?	BCH	buried or destroyed 1976
18	large, shape?, 10.36 m "diameter", 0.91 m deep, rim 0.31 m high	60?	BCH	one-meter wide backhoe trench dug through center by relic collectors in 1976, remainder buried or destroyed in 1976
19	large, shape?, 10.93 m "diameter", 1.22 m deep, rim 0.31 m high	60	E, BCH	buried 1976, extensive gopher burrowing
20	medium, shape?, 9.14 m "diameter", 0.91 m deep, rim 0.61 m high	60?	BCH	cattle disturbed rim prior to 1976, buried or destroyed 1976
21	small, shape?, 3.05 m "diameter", 0.31 m deep, rim 0.15 m high	25?	BCH	buried or destroyed 1976
22	small, shape?, 2.13 m "diameter", 0.31 m deep, no rim	25?	BCH	buried or destroyed 1976
23	small, shape?, 2.13 m "diameter", 0.31 m deep, no rim	25?	BCH	buried or destroyed 1976
24	large, shape?, 11.89 m "diameter", 0.61 m deep, no rim	20	M, BCH	visible in road cut, partially filled prior to 1976, 80% destroyed during road construction 1976, remainder buried 1976
25	medium, shape?, 7.93 m "diameter", 0.31 m deep, no rim	20	E, M, BCH	visible in road cut, partially filled prior to 1976, 80% destroyed during road construction 1976, remainder buried 1976
26	medium, shape?, 7.62 m "diameter", 0.46 m deep, no rim	75	E, BCH	partially filled prior to 1976, remainder buried 1976
27	medium, shape?, 7.01 m "diameter", 0.31 m deep, no rim	75	E, BCH	partially filled prior to 1976, remainder buried 1976

TABLE 4. Continued

C.D. #	Description of C.D.[1]	Estimated % Intact[2]	Major Sources[3]	Comment
28	medium, shape?, 8.54 m "diameter", 0.61 m deep, no rim	75	E, BCH	partially filled prior to 1976, 20% destroyed during road construction 1976, remainder buried 1976
29	small, shape?, 2.81 m "diameter", 0.61 m deep, rim 0.15 m high	25?	BCH	buried or destroyed 1976
30	small, shape?, 2.81 m "diameter", 0.61 m deep, rim 0.15 m high	25?	BCH	buried or destroyed 1976
31	medium, shape?, 7.01 m "diameter", 0.91 m deep, rim 0.15 m high	25?	BCH	buried or destroyed 1976
32	small, shape?, 2.44 m "diameter", 0.31 m deep, rim 0.15 m high	25?	BCH	buried or destroyed 1976
33	medium, shape?, 8.54 m "diameter", 0.91 m deep, rim 0.31 m high	25?	BCH, I	used as trash dump, buried or destroyed 1976
34	small, shape?, 2.81 m "diameter", 0.31 m deep, rim 0.15 m high	25?	BCH	buried or destroyed 1976
35	small, shape?, 3.05 m "diameter", 0.31 m deep, no rim	25?	BCH	buried or destroyed 1976
36	small, shape?, 2.44 m "diameter", 0.31 m deep, no rim	25?	BCH	buried or destroyed 1976
37	small, shape?, 3.66 m "diameter", 0.61 m deep, no rim	25?	BCH	buried or destroyed 1976
38	small, circular, 4.60 m "diameter", 0.61 m deep, no rim	95	M, BCH	intact but ill defined, possibly due to cattle disturbance
39	large, rectangular, 11.50 x 12.45 m, 1.07 m deep, rim 0.61 m high, rounded corners	95	M, E, BCH	intact
40	large, rectangular, 9.00 x 8.90 m, 0.91 m deep, rim 0.61 m high	80	M, BCH	partially filled 1976
41	small, oval, 5.10 x 4.80 m, 0.61 m deep, no rim	95	M, E, BCH, I	intact, used as trash dump, trash burnt
42	small, oval or circular, ca. 1.90 m "diameter", depth?, rim?	30	E	visible in road cut, filled prior to 1976, 70% destroyed during road construction 1976

TABLE 4. Continued

C.D. #	Description of C.D.[1]	Estimated % Intact[2]	Major Sources[3]	Comment
43	medium or large, shape?, 8.0 m "diameter", depth?, rim?	20	M	visible in road cut, possibly associated with very shallow (0.15m) oval surficial depression, filled prior to 1976, 75% destroyed during road construction 1976
44	small, oval or circular, ca. 1.40 m "diameter", depth?, rim?	30	M	visible in road cut, filled prior to 1976, 70% destroyed during road construction 1976
45	large, oval or circular, "diameter"?, depth?, rim?	50	E, I	buried prior to 1976, extensive gopher burrowing
46	small, oval, ca. 3.50 x 2.50 m, 0.70 m deep, no rim	30	M	also visible in river bank, partially destroyed by bank slumpage, cattle disturbance
47	small, circular, 1.50 m "diameter", 0.15 m deep, no rim	95	M	intact but ill defined, possibly not cultural
48	small, circular, 2.20 m "diameter", 0.20 m deep, no rim	95	M	intact
49	small, circular, 2.10 m "diameter", 0.15 m deep, no rim	95	M	intact
50	medium, shape?, ca. 7.0 m "diameter", depth?, rim?	60	I, M	partially filled prior to 1976 for cow burial, remainder buried in 1976
51	small, circular, 2.50 m "diameter", 0.20 m deep, no rim	95	M	intact but ill defined, possibly not cultural
52	small, circular, 3.0 m "diameter" 0.20 m deep, no rim	95	M	intact, south half covered with road slumpage 1976
53	small, oval or circular, ca. 2.3 m "diameter", depth?, rim?	95	E	pit underneath c.d. 7
54	large, shape?, ca. 15.0 m "diameter", depth?, rim?	20?	SIF, M, I	probably partly destroyed during 1976 land alterations

TABLE 4. Continued

C.D. #	Description of C.D.[1]	Estimated % Intact[2]	Major Sources[3]	Comment
55	medium, shape?, ca. 8.0 m "diameter", depth?, rim?	0	SIF, M, I	completely destroyed by road construction 1976
56	small, shape?, 5.0 m diameter", depth?, rim?	0?	SIF, M, I	probably completely destroyed during 1976 land alterations
57	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M, I	probably completely destroyed during 1976 land alterations
58	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M, I	probably completely destroyed during 1976 land alterations
59	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M, I	probably completely destroyed during 1976 land alterations
60	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M, I	probably completely destroyed during 1976 land alterations
61	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M, I	probably completely destroyed during 1976 land alterations
62	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M, I	probably completely destroyed during 1976 land alterations
63	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M, I	probably completely destroyed during 1976 land alterations.
64	medium or large, shape?, ca. 10.0 m "diameter", depth?, rim?	20?	SIF, M	probably partially destroyed and partially filled during 1976 land alterations.
65	medium or large, shape?, ca. 10.0 m "diameter", depth?, rim?	20?	SIF, M	probably partially destroyed and partially filled during 1976 land alterations.

TABLE 4. Continued

C.D. #	Description of C.D.[1]	Estimated % Intact[2]	Major Sources[3]	Comment
66	small, shape?, ca. 5.0 m "diameter", depth?, rim?	0?	SIF, M	probably completely destroyed during 1976 land alterations
67	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M	probably completely destroyed during 1976 land alterations
68	small, shape?, 5.0 m "diameter", depth?, rim?	0?	SIF, M	probably completely destroyed during 1976 land alterations
69	large, shape?, ca. 15.0 m "diameter", depth?, rim?	0?	SIF, I, M	dug with bulldozer by relic collector in 1976, remainder buried or destroyed 1976
70	small, shape?, 5.0 m "diameter", depth?, rim?	25?	SIF, M	buried or destroyed 1976
71	small, shape?, 5.0 m "diameter", depth?, rim?	25?	SIF, M	buried or destroyed 1976
72	small, shape?, 5.0 m "diameter", depth?, rim?	25?	SIF, M	buried or destroyed 1976
73	small, shape?, 5.0 m "diameter", depth?, rim?	25?	SIF	buried or destroyed 1976
74	small, shape?, ca. 5.0 m "diameter", depth?, rim?	25?	SIF	buried or destroyed 1976
75	small, shape?, ca. 5.0 m "diameter", depth?, rim?	25?	SIF	buried or destroyed 1976
76	small, shape, 5.0 m "diameter", depth?, rim?	25?	SIF	buried or destroyed 1976
77	small, shape?, ca. 4.0 m "diameter", depth?, rim?	20?	SIF	buried or destroyed 1976
78	small, shape?, ca. 4.0 m "diameter", depth?, rim?	20?	SIF	buried or destroyed 1976

1 Terminology follows that defined in section 4.2.2. (c). Measurements from BCH map and 1980 field work.

2 Estimate does not include percentage destroyed as a result of archaeological excavations.

3 Abbreviations used are: E = excavations; M = mapping and observation; BCH = site map produced by B.C. Dept. of Highways; CM = Charlton map; I = interviews; SIF = site inventory forms.

4 Dimensions were measured to the nearest 0.5 foot (0.15m) on the BCH map and were only estimated on the site inventory forms.

as a root cellar in the late 1940s by a Swede who lived in a cabin just beyond the site. Pieces of shaped wood stick out from c.d. 12 in the river bank, suggesting that it may have been covered or used as a trash dump in this century. This would negate, however, the possibility that the depressions was originally aboriginal.

Assuming that the count of 78 depressions is correct, the original site occupied an area of at least 4550 m^2 (1.12 acres). This calculation includes the open areas between depressions but omits areas such as the drainage channel along the western foot of the knoll. The site would have been considerably larger in area if substantial portions of the site have slumped into the river. The size of the site is not, of course, an indication of village size as not all the cultural depressions necessarily date from the same time period. This point is well illustrated by the superposition of c.d. 7 on c.d. 53 (see appendix II).

Following the definitions presented in section 4.2.2. (c), 54 of the 78 cultural depressions can be considered small, 13 fall in the medium category, and 11 qualify as large depressions. Nineteen cultural depressions were either circular or oval in plan whereas only 3 displayed a rectangular form. Although shape was not recorded for 56 of the depressions, the 37 small ones were probably circular or oval in plan because small rectangular cultural depressions

have not been recorded in the South Thompson valley.

When all 78 cultural depressions were plotted on a map, it became difficult to distinguish between the central and eastern clusters which were so clearly demarked on the BCH map. The shallow drainage channel, which runs across the site and separates the central cluster from the western one, conveniently divides the site into an eastern and western half. Thirty-one cultural depressions comprise the western part of the site and 47 cultural depressions make up the eastern half. All 3 sizes and both shapes are found in both ends of the site; Table 5 provides a count for each attribute and attribute combination. Because the shape of so many of the now-buried and destroyed cultural depressions was never recorded, it is difficult to evaluate the significance, if any, of the minor differences in frequency between circular and rectangular depressions in the two parts of the site but the frequency distribution of the three sizes appears to be similar for both the eastern and western ends of EdQx 15.

A possibly unique feature is the presence of what may be a side entrance to c.d. 11 (Fig. 5). This feature was considered part of c.d. 11 and was not numbered. C.d. 11 is a large depression of unknown shape located in the western half of the site. Land alterations in 1976 covered both the cultural depression and the "side entrance". The only

TABLE 5.

Distribution of cultural depression size and shape at EdQx 15.

C.D. Size	C.D. Shape	Western Area	Eastern Area	Total
Small	Circular	10	7	17
	Rectangular	0	0	0
	Shape?	13	24	37
	Total	23	31	54
Medium	Circular	0	0	0
	Rectangular	1	0	1
	Shape?	2	10	12
	Total	3	10	13
Large	Circular	1	1	2
	Rectangular	0	2	2
	Shape?	4	3	7
	Total	5	6	11
Total of All Sizes	Circular	11	8	19
	Rectangular	1	2	3
	Shape?	19	37	56
	Total	31	47	78

record of this "side entrance" appears on the Charlton map and was confirmed by Charlton in a discussion held in 1980. Apparently, this feature was overlooked when the site was recorded in 1973 and when it was mapped by the B.C. Ministry of Transportation and Highways. Since it is possible that other such features may have been missed, we cannot say with any certainty that the c.d. 11 "side entrance" is unique. Nevertheless, it is the only possible side entrance recorded for the Monte Creek site. Similar features have been noted at other village sites in the South Thompson valley, especially in sites to the east of Monte Creek (Mohs 1978: Table 6.3).

Another cultural feature attributed to the Monte Creek site is the underground passageway or tunnel. Mohs (1978:Table 6.3) states that two recently filled depressions at EdQx 15 were interconnected with a passageway and two tunnels were observed by several researchers in the mid-1970s. In the summer of 1974, the late Ike Willard, a former resident of Chase and member of the South Thompson Band, drew the attention of anthropologists Randy Bouchard and Dorothy Kennedy, and archaeologists Michael Blake, Abbey Bates, and Derek Wales to two linear surficial depressions at EdQx 15 which according to him, were subterranean tunnels. Both depressions were shallow and narrow (estimated 0.30 - 0.45 m wide by 0.10 - 0.15 m deep) and had concave

cross-sections. Although not obvious, and resembling cattle paths, both features were distinct enough not be considered natural. One tunnel ran from a large cultural depression to an indentation or small bay in the river bank; the other tunnel interconnected two cultural depressions. According to Mr. Willard, who spent his childhood in a pithouse, interconnected houses and underground passageways leading to rivers or other safe places were not uncommon. He said that he could still see the tunnel in the river bank when he visited the area around 1910 (Randy Bouchard 1980).

Unfortunately, no map of the site was made at that time, nor was the exact location of the tunnels recorded. Bouchard, Kennedy, Bates, and Wales revisited EdQx 15 in 1980 but they were unable to relocate the tunnel depressions. All were in agreement that the tunnels were located in the eastern part of the site and, probably, in the area which had not been disturbed during the 1976 land alterations. But none could identify the indentation in the river bank nor could they state with certainty which depressions had been interconnected. They seemed to think, however, that the tunnel leading to the river bank probably originated from either c.d. 38 or 39, and that the other passageway joined c.d. 38 with c.d. 39, or c.d. 39 with c.d. 40, or c.d. 40 with c.d. 41. River slumpage and cattle grazing may have obscured or removed some of the evidence, of

course, but it is still surprising that no surficial evidence of these features should remain. A single test excavation between c.d.s 39 and 40 didn't detect a subterranean tunnel, but more archaeological work will need to be done before the enigma of the EdQx 15 tunnels can be resolved.

5.3. Impact History

As a result of the background research and archaeological work, it is not possible to reconstruct some of the events which altered the condition of the site and led to its present size and internal structure. As is to be expected, some of these events are well documented, whereas others are not. Our information is far from complete and, not surprisingly, deals primarily with the most recent alterations to the site. Nevertheless, a preliminary impact history is beginning to take shape for the site and can probably be augmented by additional archaeological research and continued discussions with local residents and former landowners.

Natural processes have probably affected the site since its initial occupation almost 1900 years ago. Occasional river flooding may have caused abandonment of some cultural depressions and may have left its mark on soil chemistry and site stratigraphy. River action has undercut the river bank and has led to some slumping. Both c.d.s 12

and 47 have partly suffered that fate. What remains to be determined is what impact such slumpage may have had on the site. As mentioned earlier several large and small cultural depressions were destroyed in this manner more than 30 years ago.

Gopher action seems to have been a source of some disturbance at the site, especially in the central and western areas where these rodents have been notably active. Burrowing has moved cultural sediments and archaeological materials both vertically and horizontally, and a few recent objects were found at considerable depths below surface in gopher tunnels. If the current gopher community on the site is any indication, the amount of earth displaced daily by these animals is phenomenal and undoubtedly has had an impact on the site.

Human action has negatively affected the site since at least the end of the 19 century when the depressions were first used as trash dumps. Local residents confirmed the continuation of this practise, and modern debris can be seen everywhere on the site, both within the depressions and elsewhere. Some of this trash must have been buried or otherwise added to the site matrix because cans, glass, wire, nails, scrap metal, and other recent garbage was noted archaeologically in the upper layers of several cultural depressions (e.g. c.d.s 3,7,11,16, and 39). Gopher activity

may have been responsible for the intrusion of some of this material and digging by relic collectors probably also contributed to this problem. Excavations in c.d. 41 revealed that a large fire had been lit in this depression to burn discarded wood.

Cattle ranching has also had its impact on the site. Cattle have damaged depression rims (e.g. c.d.s 3 and 40), have caused sluffing of depression edges, and, in the case of c.d. 46, have worn a path through the depression in order to get to the river. More serious was the practise of burying dead cattle in cultural depressions under a few centimeters of fill, usually taken from the rims. This happened in c.d. 7 (see appendix II) and in c.d. 50 where 3 or 4 heifers were interred in 1970. Fence construction has also affected several cultural depressions, notably c.d. 7.

At least one structure stood on the site prior to the recent shop, pump house, and mobile home. A large shed ca. 10 x 5 m, is clearly visible just west of c.d. 28 and south of c.d. 45 on several aerial photographs. It was built as a C.P.R. storage shed around 1928 and, later, served as a chicken coop. It burnt down in the late 1960s. C.d. 45 was probably filled when the terrain was levelled for construction of this shed. A former land owner claims that the chicken manure has drastically altered the soil chemistry in the vicinity of this building. If so, this would constitute

another impact on the site.

A second structure could be responsible for c.d. 12. As mentioned earlier, c.d. 12 may have been roofed and used as a root cellar in the late 1940s, but the identification of c.d. 12 was not certain. Excavation of a root cellar would have, of course, disturbed any archaeological deposits in the immediate vicinity, and this could have been particularly severe if the cellar had utilized an existing aboriginal depression.

Vandalism and relic collecting have also damaged the site. Bypassers and artifact seekers have haphazardly dug into many of the larger depressions at EdQx 15 especially in the western end of the site where small backdirt piles and shallow, irregular holes can still be seen in the two large, intact depressions (c.d.s 3 and 7). According to one local resident, c.d. 3 has been looted at least 5 times over the last 2 decades and many of the other large depressions received similar treatment. Almost all of c.d. 69 was scraped with a bulldozer in 1976 so that the operator could "see what was there". Also in 1976, a passing work crew used a backhoe to put an exploratory trench through the middle of c.d. 18, with the trench being about one meter wide.

Undoubtedly, the most destructive of all the events to impact the site were the intentional land alterations undertaken by previous land owners. At least two such

events have taken place at EdQx 15. Figs. 6-9 map the extent of this impact.

Sometime around 1928, the knoll was slightly levelled. This partially filled the larger cultural depressions in this area and totally obscured the smaller depressions. Rims, if present, were flattened and pushed, in all likelihood, into the depressions. This reduced the size and depth of the surficial depressions, and it was these depressions which were recorded on the BCH map. The reason for this levelling is unknown but may be associated with the construction of the C.P.R. storage shed.

In 1976, a second and more drastic land alteration took place. The new land owner, eager to make his property suitable for residential and business purposes, built a roadway parallel to the C.P.R. fence. He also cut away the eastern edge of the knoll for fill which he pushed eastward to provide a level surface for a welding shop. The northern edge of the knoll was also removed to provide fill for a mobile home foundation. A septic tank, drain field, and "basement" storage area were also dug at this time just beyond the northern and northeastern edge of the knoll. These activities resulted in the burial or destruction of c.d.s 56-79, 77, and 78. It was at this time that the Charlton and BCH maps were drawn.

In the spring and summer of 1976, the roadway was

gravelled and extended into a loop, the mobile home was erected, and part of the drainage channel that runs across the site was filled with earth taken from the northern and western margins of the knoll. Large parts of c.d.s 24, 25, 42, 44, and all of c.d. 55 were destroyed. C.d. 54 was buried or destroyed in the process. Also at that time, fill from the knoll was pushed northeastward, covering or destroying c.d.s 29-37.

Two other land altering events took place that summer. What remained of the central knoll was prepared for planting with a commercial rotovator which loosened the surface to a depth of about 25 cm. The machine was moved across the knoll in a circular direction, completely filling c.d.s 26-28, and what was left of c.d.s 25 and 42-44. All of these, of course, had already been partially filled during the 1928 (?) land alteration mentioned above.

A similar surface preparation took place at the western end of the site. A bulldozer was used to push in the rims of the larger cultural depressions and to move fill from the river bank into some of the deeper depressions. The bulldozer did not enter any of the bigger depressions, thereby restricting its impact primarily to the rim areas. Up to 30 cm of fill was removed in some areas and many of the small cultural depressions, including c.d.s 8-10, 13-15, 17, 21-23, and 76, may have been destroyed or

partially obliterated in the process. Large c.d.s 11, 16, and 18-20 were filled with rim and other deposits. A considerable lateral displacement of cultural fill took place and probably resulted in the mixing of materials of differing antiquities.

Parts of the western end of the site were also rotovated in 1976. C.d. 50, which had been used around 1970 for the burial of several dead cows, was completely levelled with this machine. Fortunately, the most westerly depressions were not disturbed, and c.d. 7 was only partially filled.

Early in 1976, the Heritage Conservation Branch began to monitor the site. Officials of the Branch held discussions with the land owner regarding alternatives to continued site destruction. The likelihood of further land alterations led to the designation of the site under the Archaeological and Historic Sites Protection Act (now the Heritage Conservation Act) in March of 1976. Several mitigative options were explored and, finally, in October of 1978, the site and surrounding land was purchased by the provincial government, thereby bringing to an end the danger of continued large-scale disturbance.

5.4 Present Site Condition

Site condition was defined earlier as the degree to

which a site has maintained its original size and internal structure. An assessment of the present condition of EdQx 15 is possible now that the site's original characteristics and basic impact history have been outlined.

5.4.1. Site Size

Sixty of the 78 cultural depressions which originally made up the site are now buried or destroyed. The other 18 depressions can still be seen today although 2 of these (c.d.s 7 and 40) are partially filled. Nine of the 60 buried and destroyed depressions were investigated archaeologically and another 3 could be studied in the road cut where they were exposed. Because the remaining 48 depressions were not checked archaeologically, estimates of their condition were based on information supplied by former land owners and on extrapolation from excavated cultural depressions in the same area.

Table 6 lists the estimated condition of the 78 original cultural depressions. These conditions are expressed in terms of the percentage of deposits estimated to still be intact regardless of whether or not the cultural depression is visible surficially. It should be stressed that these are estimates and that they can be expected to vary in accuracy. Estimates for the buried or destroyed depressions which were not tested are, of course, the least reliable.

TABLE 6.

Present condition of EdQx 15 cultural depressions.

Percentage intact*	N	C.D. #
95 - 100% (little or no disturbance)	14	1,2,4-6,38,39,41,47-49,51-53
80 - 95% (light disturbance)	2	7,40
50 - 80% (moderate disturbance)	11	3,11,16,18-20,26-28,45,50
20 - 50% (extensive disturbance)	30	8-10,12-15,17,21-23,29-37,42,44, 46,70-76
5 - 20% (almost totally destroyed)	8	24,25,43,54,64,65,77,78
0 - 5% (totally destroyed)	13	55-63,66-69

* Estimates do not include aboriginal disturbance or percentage destroyed as a result of archaeological excavations.

Also, the estimates do not take into consideration the destruction caused by archaeological excavations nor any aboriginal alterations to the site such as the partial obliteration of c.d. 53 during the construction of c.d. 7.

The estimated percentages of intact deposits range from a high of 95% for some of the minimally disturbed depressions, to a low of 0% for totally destroyed depressions. No depressions were considered to be 100% intact because all were subject to rodent and cattle activity. This range in variation was initially divided into six categories (Table 6).

If these estimates are correct, 65 of the original cultural depressions (83.3%) have survived in whole or in part to the present day. Forty-seven of these depressions, however, are now buried and 8 of these are almost totally destroyed. Using a ratio of 1: 11.2 : 21.7 for the relationship in volume between small-, medium-, and large-sized depressions (based on the mean dimensions for each size group), approximately 46.8% of all the original cultural deposits of EdQx 15 are still intact. This total breaks down into 43.2% for deposits from small cultural depressions, 39.2% for cultural deposits found in medium sized depressions, and 52.3% for deposits from large cultural depressions. An error factor of 5% can probably be attributed to these estimates.

The destruction of 13 cultural depressions and parts of 8 other depressions has resulted, of course, in a reduction in the area of the site. Fortunately, this reduction was minimized by the fact that most of the destroyed depressions were small and located close together. Today, the site, including the buried depressions, covers about 2975 m^2, approximately 65.4% of the original 4550 m^2.

5.4.2. Internal Site Structure

Tables 7 and 8 show the distribution of disturbance at EdQx 15. This information is expressed in terms of the number and percentages of cultural depressions which have been impacted, with the cultural depressions being grouped according to location (eastern half of the site, western half of the site, and the entire site), size (small, medium, and large), shape (rectangular, circular/oval, and unknown), and a combination of location and size. No combinations of shape and size or shape and location were attempted because of the large number of buried cultural depressions for which no shape is known.

An examination of Tables 7 and 8 leads to several observations. Firstly, the eastern part of the site was more severely impacted than the western half. All 21 destroyed and almost totally destroyed cultural depressions were located in the eastern half of the site, representing close to

TABLE 7.

Distribution of disturbance (present condition) at EdQx 15.

Percentage Intact	Western End			Eastern End			Total		
	S	M	L	S	M	L	S	M	L
95 - 100% (litle or no disturbance)	9	0	0	4	0	1*	13	0	1*
80 - 95% (light disturbance)	0	1*	0	0	0	1*	0	1*	1*
50 - 80% (moderate disturbance)	0	2	5**	0	3	1	0	5	6**
20 - 50% (extensive disturbance)	14	0	0	14	2	0	28	2	0
5 - 20% (almost totally destroyed)	0	0	0	2	4	2	2	4	2
0 - 5% (totally destroyed)	0	0	0	11	1	1	11	1	1
Total	23	3	5	31	10	6	54	13	11

* Rectangular in plan; others are either circular (including oval) or shape unknown.

**Includes c.d. 11 with possible side entrance.

TABLE 8.

Distribution of disturbance expressed in percentages*.

Percentage Intact **	Percentage of Total	Western End				Eastern End				Shape			Size		
		S	M	L	Total	S	M	L	Total	Rec	Cir	?	S	M	L
80 - 100%	20.5	39.1	33.3	0.0	32.3	12.9	0.0	33.3	12.8	100.0	68.4	0.0	24.1	7.7	18.2
(light to little or no disturbance)	(16)	(9)	(1)	(0)	(10)	(4)	(0)	(2)	(6)	(3)	(13)	(0)	(13)	(1)	(2)
20 - 80%	52.6	60.9	66.6	100.0	67.7	45.2	50.0	16.7	42.6	0.0	31.6	62.5	51.9	53.9	54.6
(moderate to extensive disturbance)	(41)	(14)	(2)	(5)	(21)	(14)	(5)	(1)	(20)	(0)	(6)	(35)	(28)	(7)	(6)
0 - 20%	26.9	0.0	0.0	0.0	0.0	41.9	50.0	50.0	44.6	0.0	0.0	37.5	24.1	38.5	27.3
(almost totally to totally destroyed	(21)	(0)	(0)	(0)	(0)	(13)	(5)	(3)	(21)	(0)	(0)	(21)	(13)	(5)	(3)

* Some totals are not exactly 100.0% due to "rounding off" of each percentage. Counts are given in parentheses.

** 'Percentage intact' grouped into 3 categories, with data taken from Tables 6 and 7.

half (44.6%) of all eastern depressions. Another 42.6% exhibit moderate to extensive disturbance, leaving only 6 relatively undisturbed eastern depressions (12.8%). In comparison almost one third (32.3%) of all western depressions display only light or no disturbance, and no western depressions were completely destroyed.

About half of all small, medium-sized, and large cultural depressions at the site were subjected to moderate or extensive disturbance, and another quarter to a third were destroyed or almost so. Medium-sized cultural depressions faired somewhat poorer than the other two sizes, but the difference is probably not significant. Almost a quarter of all small depressions remain undisturbed or were only lightly damaged.

Because it was possible to observe only the shapes of intact cultural depressions, it is not clear if rectangular and circular depressions were affected differentially. All destroyed or badly damaged depressions are, of course, of unknown shape, but 6 of the moderate to extensively disturbed depressions could be identified as circular or oval in plan. All 3 rectangular depressions remain relatively undisturbed. C.d. 11, with the possible side entrance, was buried and is an estimated 60% intact. The condition of the "side entrance" is not known, but it could be more disturbed than the rest of the depression, depending on its

original depth and on the amount of fill removed by the bulldozer.

When both size and location are considered, half of the 6 combinations appear to be relatively undisturbed (Table 8). About one third of small and medium western depressions and a third of large eastern depressions display little or no disturbance, but there are no undisturbed large western and medium eastern depressions. Half of the large and medium eastern depressions were totally or almost totally destroyed and another 50% of the medium eastern depressions received moderate to extensive damage. All large western depressions display moderate to extensive disturbance. Fortunately, no western depressions were destroyed, but all received moderate to extensive damage.

5.5 Final Comments

Today, the Monte Creek site no longer looks like the original site. The site's appearance has changed dramatically, primarily because of the extensive land alterations which took place in 1976, although earlier changes also played a part. This change is readily apparent due to the large number of cultural depressions which have vanished from view. Only 18 depressions can still be seen today, covering about 15.4% of the original site area.

Archaeological testing has revealed, however, that

this destruction was not as drastic as might be anticipated from a simple surface inspection. Only 21 cultural depressions, comprising 26.9% of all depressions, were totally or almost totally destroyed, leaving 39 buried but subsurficially intact depressions. Combined, the buried and still visible depressions cover 65.4% of the original site area, a less drastic change than that implied by the 15.4% given above.

The condition of the extant and buried depressions vary considerably (Tables 6, 7, and 8). Most of the extant depressions show little or no disturbance but almost all of the buried depressions exhibit at least moderate disturbance (50-80% intact). Approximately 46.8 $\pm$ 5% of all archaeological deposits at EdQx 15 are probably still intact, and this estimate is a good indicator of the condition of the site.

When the distribution of the destruction and disturbance is considered, it is obvious that not all parts of the site were impacted equally. Damage in the eastern and central areas were more severe due primarily to the cut-and-fill alterations associated with the construction of the mobile home and welding shop, and with the preparation of the roadway. Three types of cultural depressions were totally destroyed or almost so, and most of the other types of depressions were greatly reduced in number. Nevertheless, many of the types are still represented by several

relatively undisturbed depressions, and all 3 rectangular depressions escaped substantial harm. Whether or not this destruction is sufficient to warrant the conclusion that the site no longer maintains its original internal structure is certainly not clear. What is apparent, however, is that no size, shape, or location of cultural depression missed at least some minor disturbance, and that the amount of damage varies considerably depending on the size and location of the depression.

6. SITE AGE AND CULTURAL AFFILIATION

The second objective of the research was "to determine the extent, location, age, and cultural affiliation of the archaeological deposits" at EdQx 15. The extent and location of the cultural deposits have already been discussed in section 5 as part of the assessment of present site condition. In this section, the question of the age and cultural affiliation of the archaeological deposits will be addressed.

6.1. Site Age

Each cultural depression at EdQx 15 was treated as a discrete cultural unit with its own place in time. Age estimates were obtained by radiocarbon dating. Artifact styles, architectural features, and settlement attributes were not cross-dated with other sites in the area; instead, these traits served as general indicators of cultural affiliation, with each archaeological unit dating to a specific time period.

Although the excavations recovered very few non-collagenic organics suitable for radiocarbon dating, 7 small concentrations of wood and charcoal were large enough to be submitted to Simon Fraser University for radiocarbon age determination. Table 9 lists the 7 samples and their ages.

TABLE 9.

EdQx 15 radiocarbon dates.

C.D. #	Type of C.D.	Sample #	Dating Lab #	Age[1] in Years B.P.	Provenience
1	circular storage pit	1-C3	SFU-32	450±80	from fill (layer 3) inside pit, ca. 20 cm above bottom
7	rectangular house pit	7-C6	SFU-33	200±80	from fill (layer 3) on house pit floor
19	house pit, shape?	19-C1	SFU-35	1450±80	from fill (layer 4) directly above house pit floor
25	circular house pit	25-C2	SFU-37	1760±130	from fill (layer 2) in oval storage pit (feature 2) in house floor close to west wall
39	rectangular house pit	39-C8	SFU-36	190±130	from floor(?) fill (layer 2) close to north wall, ca. 18 cm above house pit bottom
39	rectangular house pit	39-C2	SFU-38	1030±180	from hearth (feature 4) floor (layer 6) at bottom of house pit
53	circular storage pit	53-C1[2]	SFU-34	530±80	from fill (layer 1) at the bottom of pit

[1] Date expressed with one sigma error factor.

[2] Formerly sample #7-C2.

Sample pretreatment involved the removal of dissolved carbonates by boiling in a 1% solution of hydrochloric acid, but humic acids were not removed due to the small size of the samples. The dates were determined using the new ANU sucrose standard, and do not include an isotopic fractionation correction.

The radiocarbon dates range in age from 1760±130 years B.P. for c.d. 25, to 190±130 and 200±80 years B.P. for c.d.s 39 and 7, respectively. All 7 dates are acceptable given what is known about the site and the local archaeology. One result, however, was somewhat of a surprise: the date of 1030±180 years B.P. for c.d. 39 seems somewhat old for this house pit, given the younger assay of 190±130 years B.P. from this house. The 1030±180 years B.P. date falls, however, within the range of dates obtained so far on rectangular cultural depressions in this area (Mohs 1978:48), and it may be a valid indicator of the earliest occupation of c.d. 39. If so, there seems to have been a 500 year or more occupational hiatus in this house.

6.2 Cultural Affiliation

The cultural affiliation of the archaeological deposits at EdQx 15 can best be expressed in terms of the sequence of archaeological units which has been established for the study area. Three components representing 3

archaeological units are present at the site. Component I is a manifestation of the Historic period (or phase) which post-dates A.D. 1825; component II represents the Kamloops phase, dated from 1400 to 200 years B.P.; and component III consists of deposits attributable to the Thompson Phase, ca. 2000 to 1400 years B.P. Each phase was defined at some length in section 3.3.2. Phase affiliation was determined by comparing the artifact inventory and architectural characteristics of each cultural depression with the diagnostic traits of each phase.

The presence of diagnostic artifact types was one of the best indicators of cultural affiliation. Small, Kamloops style, side-notched arrow points, characteristic of the Kamloops phase, were found in c.d.s 7, 11, and 39, whereas large, barbed, corner-notched points, diagnostic of the Thompson phase, came from c.d. 43 and the disturbed fill in c.d. 19. Pentagonal bifaces diagnostic of the Kamloops phase were recovered in c.d.s 11 and 39. A narrow-spurred graver typical of the Kamloops phase came from c.d.s 39 and 43 (intrusive ?), whereas a wide-spurred graver characteristic of the Thompson phase was found in c.d. 27. The higher incidence of cryptocrystaline detritus and tools in c.d.s 25 and 43 may also be indicative of Thompson phase affiliation although c.d. 7, radiocarbon dated at 200±80 years ago, also has a high cryptocrystaline count.

Artifacts of metal, glass, plastic, and other modern materials obviously date to the Historic period and they were found in all tested cultural depressions except c.d.s 42 and 53. Similarly, domestic animal bones are also indicative of an historic occupation. Cattle, pig, and chicken bones came from c.d.s 7, 11, 19, 24, and 41 (see appendix III).

The cultural material collected from the surface of the knoll indicated a Thompson phase affiliation for the buried and destroyed cultural depressions of this area, including c.d.s 25-28, probably c.d.s 24 and 43, and possibly c.d.s 42 and 44. This surficial material included large, barbed, corner-notched points; large, finely-flaked, leaf-shaped points; a narrow-spurred graver; small, cryptocrystaline flake cores; and a high incidence of cryptocrystaline detritus.

The Chmielewski collection contains many artifacts characteristic of the Thompson phase. These came primarily from the road where it cuts through c.d.s 25 and 42 - 44, and support a Thompson phase affiliation for these cultural depressions.

Radiocarbon dates are also indicators of cultural affiliation if the dates are reliable and if the temporal duration of each phase is known. The Monte Creek radiocarbon date of 1760±130 years B.P. falls within the period

attributed to the Thompson phase, and 3 other assays (1030±180 years B.P. for c.d. 39, 530±80 years B.P. for c.d. 53, and 450±80 years B.P. for c.d. 1) date to the Kamloops phase. Two radiocarbon dates (190±130 years B.P. for c.d. 39 and 200±80 years B.P. for c.d. 7) date to the Kamloops phase/Proto-historic phase transition but the absence of Euroamerican trade items in both c.d. 7 and 39 indicate a Kamloops phase affiliation.

The Thompson phase/Kamloops phase transition is marked by the radiocarbon date of 1450±80 years B.P. for c.d. 19. Two Thompson phase artifacts came from the bulldozed fill but no diagnostic artifacts were obtained from the undisturbed deposits. The size and location of c.d. 19 suggest a Kamloops phase affiliation (see below) but this has not been substantiated archaeologically.

House pit size may be an indicator of cultural affiliation. Thompson phase house pits are generally smaller than their Kamloops phase counterparts with mean diameters of 5.0 and 7.0 m respectively (Wilson 1974:181). What makes it difficult to apply this criterion, however, is that the size ranges for both Thompson and Kamloops phase house pits are not well known. It is already apparent, however, that these ranges do overlap. C.d. 25, for example, is undoubtedly a Thompson phase house pit but it has a diameter of 7.0 m, which is more typical of Kamloops phase houses.

Similarly, c.d.s 24 and 43 probably date to the Thompson phase based on surficial cultural material, distance from the river (see below), and proximity to other Thompson phase depressions, but both are much too large for house pits of this phase. Because of these difficulties, size must be used with caution as an indicator of cultural affiliation.

House pit shape is undoubtedly another indicator of age and cultural affiliation. Rectangular house pits have been dated between 1200±75 and 490±130 years B.P. in the South Thompson area and they occur so far only in Kamloops phase and Proto-historic contexts (Johnson-Fladmark 1973:18-9; Mohs 1981; Wilmeth 1978:81). All 3 rectangular depressions at EdQx 15 (c.d.s 7, 39, and 40) are probably of late prehistoric age. C.d.s 7 and 39 can be assigned to the Kamloops phase based on radiocarbon dates (see above) and the absence of Euro-american trade items. Presumably, c.d 40 also belongs to this phase, but this has not been verified archaeologically.

According to Wilson (1974:181), deep and steep-sided house pits with high rims are characteristic of the Kamloops phase, whereas shallow, saucer-shaped depressions with low rims or no rims are diagnostic of the Thompson phase. This suggests a Kamloops phase affiliation for many of the larger cultural depressions, for they are often deep, steep-sided, and surrounded by a high rim. Assuming that the

measurements on the BCH map are correct and that imformant's memories are reliable, c.d.s 3, 7, 11, 16, 18, 19, 20, 31, 33, 39, and 40 can probably be assigned to the Kamloops phase, whereas c.d.s 24-28 are more typical of Thompson phase houses. Some caution must be exercised here, however, as the absence of rims and the shallowness of the depressions on the knoll may be due to the 1928(?) alteration of the knoll surface.

Cultural depressions with side entrances appear to be another late prehistoric and early historic phenomenon (Mohs 1978:51). This architectural feature has been reported ethnographically and archaeologically (Brown and Lundborg 1977:30; Mohs 1978:44), but only one such entrance has been excavated locally. That entrance was associated with c.d. 10 at EdRa 9 and dated to the Proto-historic period (Wilson 1974:92). Assuming that the possible side entrance to c.d. 11 at the Monte Creek site was indeed one, an absence of Euro-american trade goods in this house pit along with the presence of small, side-notched arrow points, indicate a Kamloops phase affiliation.

Richards (1981) has suggested that Kamloops phase house pits are located closer to the South Thompson River than Thompson phase houses. If so, all EdQx 15 house pits are probably attributable to the Kamloops phase except for the dwellings set back from the river on the knoll (c.d.s

24-28, 43, 45, and possibly 55). Such a conclusion should, of course, be corroborated archaeologically.

Lastly, Richards (1981) has also proposed that clusters of small cultural depressions (cache pits and ovens) are characteristic of the Kamloops phase. This would mean that the small surficial depressions grouped together at both ends of the site probably belong to the Kamloops phase. This would include c.d.s 1, 2, 4-6, 8-10, 13-15, 17, 21-23, 48, 49, and 53 at the western end of the site, c.d.s 29, 30, 32, 34-37, and 70-73 at the other end, and, in all likelihood, c.d.s 56-63 in the vicinity of the mobile home. Radiocarbon dates substantiate a Kamloops phase affiliation for c.d.s 1 and 53.

All 78 cultural depressions at EdQx 15 have been assigned to one of the 3 components using one or more of the preceeding criteria. The results are given in Table 10. The reliability of these assignments vary greatly, depending on the amount of information available and the criteria employed. Nine of the cultural depressions could be assigned with some confidence to one of the phases, including 5 to the Kamloops phase and 4 to the Thompson phase. The affiliation of the other cultural depressions was, however, less certain. Fifty-nine depressions were tentatively attributed to the Kamloops phase and another 9 were tentatively assigned to the Thompson phase. Historic debris was present

TABLE 10.

Cultural affiliation of EdQx 15 cultural depressions.

C.D. #	Component[1] I	II	III	Basis for Cultural Affiliation
1	+	+	-	Artifacts, radiocarbon date, part of small pit cluster, location
2	-?	+?	-	Part of small pit cluster, location
3	+	+?	-	Artifacts, size, location, rim, depth, steep sides
4	-?	+?	-	Part of small pit cluster, location
5	-?	+?	-	Part of small pit cluster, location
6	-?	+?	-	Part of small pit cluster, location
7	+	+	-	Artifacts, radiocarbon date, shape, location, rim, depth, steep sides
8	-?	+?	-	Part of small pit cluster, location
9	-?	+?	-	Part of small pit cluster, location
10	-?	+?	-	Part of small pit cluster, location
11	+	+	-	Artifacts, size, location, possible side entrance, rim, depth
12	+?	-?	-	Informant, exposed wood
13	-?	+?	-	Part of small pit cluster, location

TABLE 10.

C.D. #	Component[1] I	II	III	Basis for Cultural Affiliation
14	-?	+?	-	Part of small pit cluster, location
15	-?	+?	-	Part of small pit cluster, location
16	-?	+?	-	Location, size, rim, depth
17	-?	+?	-	Part of small pit cluster, location
18	-?	+?	-	Location, size, rim, depth
19	+	+?	-?	Artifacts from disturbed fill indicate component III; size, depth, rim, location, and steep pit side suggest component II; radiocarbon date inconclusive; historic debris
20	-?	+?	-	Location, rim, depth
21	-?	+?	-	Part of small pit cluster, location
22	-?	+?	-	Part of small pit cluster, location
23	-?	+?	-	Part of small pit cluster, location
24	-?	-?	+?	Size indicates component II but rim, depth, and location suggest component III
25	+	-	+	Artifacts, cryptocrystaline count, radiocarbon date, location, depth, rim
26	+	-	+	Artifacts, size, location, depth, rim.

TABLE 10.

C.D. #	Component[1] I	II	III	Basis for Cultural Affiliation
27	+	-	+	Artifacts, size, location, rim, depth
28	-?	-	+?	Location, rim, depth
29	-?	+?	-	Location, part of small pit cluster
30	-?	+?	-	Location, part of small pit cluster
31	-?	+?	-	Location, depth
32	-?	+?	-	Location, part of small pit cluster
33	+?	+?	-	Location, steep pit sides, depth, rim
34	-?	+?	-	Location, part of small pit cluster
35	-?	+?	-	Location, part of small pit cluster
36	-?	+?	-	Location, part of small pit cluster
37	-?	+?	-	Location, part of small pit cluster
38	-?	+?	-	Location
39	+	+	-	Location, size, shape, artifacts, radiocarbon dates, rim, steep sides, depth
40	-?	+?	-	Location, shape, rim, steep sides, depth
41	+	+?	-	Location
42	-	-	+?	Location

TABLE 10.

C.D. #	Component[1] I	II	III	Basis for Cultural Affiliation
43	-?	-?	+?	Location and surface artifacts indicate component III; size typical of component II
44	-?	-	+?	Location
45	+	-	+	Location, artifacts
46	-?	+?	-	Location
47	-?	+?	-	Location, part of small pit cluster
48	-?	+?	-	Location, part of small pit cluster
49	-?	+?	-	Location, part of small pit cluster
50	+	+?	-	Informants, location
51	-?	+?	-	Location
52	-?	+?	-	Location
53	-	+	-	Location, part of small pit cluster, radiocarbon date
54	-?	+?	-	Location, size
55	-?	-	+?	Location, size, surface material
56	-?	+?	-?	Location and part of small pit cluster indicate component II; surface material indicates component II.
57	-?	+?	-?	Location and part of small pit cluster indicate component II; surface material indicates component II.

TABLE 10.

C.D. #	Component[1] I	II	III	Basis for Cultural Affiliation
58	-?	+?	-?	Location and part of small pit cluster indicate component II; surface material indicates component II.
59	-?	+?	-?	Location and part of small pit cluster indicate component II; surface material indicates component II.
60	-?	+?	-?	Location and part of small pit cluster indicate component II; surface material indicates component II.
61	-?	+?	-?	Location and part of small pit cluster indicate component II; surface material indicates component II.
62	-?	+?	-?	Location and part of small pit cluster indicate component II; surface material indicates component II.
63	-?	+?	-?	Location and part of small pit cluster indicate component II; surface material indicates component II.
64	-?	+?	-	Location, size
65	-?	+?	-	Location, size
66	-?	-	+?	Location, size, surface material
67	-?	-	+?	Location, surface material
68	-?	-	+?	Location, surface material
69	-?	+?	-	Location, size

TABLE 10.

C.D. #	Component[1] I	II	III	Basis for Cultural Affiliation
70	-?	+?	-	Location, part of small pit cluster
71	-?	+?	-	Location, part of small pit cluster
72	-?	+?	-	Location, part of small pit cluster
73	-?	+?	-	Location, part of small pit cluster
74	-?	+?	-	Location
75	-?	+?	-	Location
76	-?	+?	-	Location
77	-?	+?	-	Location
78	-?	+?	-	Location

[1] Component I = Historic period, 125 years B.P. to present (post A.D. 1825); component II = Kamloops phase, 1400-200 years B.P.; component III = Thompson phase, ca. 2000-1400 years B.P. Symbols used are: + = component present; - = component absent; ? = uncertainty.

in most cultural depressions, but only c.d. 12 may be an historic feature exclusively.

6.3. Discussion

The Monte Creek site was first occupied about 1800-1900 years ago and it was abandoned for the last time by the Shuswap around 200 years B.P. (A.D. 1750). The absence of late 18th and early 19th century Euro-american objects indicates that the site was probably not inhabited during the Proto-historic period from 200 to ca. 125 years ago (A.D. 1750-1825). A Euro-american utilization of the site area took place in the Historic period and has continued to the present day.

The aboriginal occupation of the site was probably seasonal and sporadic. A mid-fall to early spring residence seems likely given ethnographic settlement practises, but this has not been confirmed archaeologically. The presence of grebe, duck, and goose remains in c.d.s 7, 19, and 39 argues for a spring, summer, or fall occupation but all three species are occasionally found along the river in winter. Sockeye salmon appear to make up most of the fish remains and indicate a late summer to mid-fall occupation whereas chinook salmon bones in c.d. 53 may reflect a summer residence. Both types of salmon, however, could have been dried and consumed at the site in the winter.

Occupation of the site was probably sporadic. It seems unlikely that the site was inhabited continuously; instead, periods of settlement may have alternated with intervals of abandonment. A major occupational hiatus may have occurred between 1000 to 500 years ago but additional work will be required to confirm this. Each house was probably occupied for several years, and 2 distinct floors were uncovered in c.d. 39. The 2 radiocarbon dates from c.d. 39 indicate that abandoned house pits were occasionally re-used but, unlike the mid-Fraser area, this does not seem to have been a common practise. No lengthy occupational sequences were observed in any of the house pits and no dwelling contained more than one aboriginal component.

The prehistoric occupation of EdQx 15 spans approximately 1700 years and two archaeological phases. During the earlier Thompson phase occupation from about 1900 to 1400 years ago, the site was probably quite small, consisting of just a few circular pit houses and associated storage pits. The village was set back from the river on an elevated knoll and probably covered no more than 1150 m^2. Nine house pits and 4 smaller pits date to this period, but it is unlikely that all were used simultaneously.

A small Thompson phase settlement may also have been located closer to the river in the western part of the site because of the presence of two Thompson phase artifacts in

the bulldozed fill overlying c.d. 19. Presumably, these objects came from the vicinity of c.d. 19 but their origin has not been identified. Until a Thompson phase depression or midden deposit is located in this part of the site, there can be no conclusive archaeological evidence for a Thompson phase occupation in this area.

The 64 Kamloops phase depressions form a linear arrangement parallel to the river bank and probably represent several sequential settlements. The first Kamloops phase village at EdQx 15 seems to have been located at the western end of the site around 1400 years ago. C.d. 19 was constructed at this time. Unfortunately, the size and duration of this village is not known. Around 1000 years ago a new village rose at the other end of the site with the first occupation of c.d. 39. Again, the size and duration of this village remains to be determined.

Dates of 450±80 and 530±80 years ago on two storage pits (c.d.s 1 and 53) at the western end of EdQx 15 mark another Kamloops phase occupation of the site. Both storage pits are part of the same 8-pit cluster and the entire cluster may date to this period. No house pits are yet known from this occupation, but nearby c.d. 3 could be associated with these small pits.

A final aboriginal occupation took place just prior to the introduction of the Euro-american goods which mark

the termination of the Kamloops phase. At the east end of the site, c.d. 39 was inhabited again, while at the other end, c.d. 7 was built directly over an old cache pit (c.d. 53). Both houses date to more or less the same time period, but they probably were not occupied simultaneously. In all likelihood, they were part of two different villages, one at each end of the site.

The extent of both these villages is not known. At the eastern end, c.d.s 39 and 40 are both rectangular in plan and may be contemporary. Circular c.d. 41 is an undated house of possible Kamloops phase affiliation which may also belong to this village, based on its proximity to c.d.s 39 and 40, as may 3 small depressions (c.d.s 38, 51, and 52) close to c.d. 39.

At the western end, c.d. 11 may date to the same period as c.d. 7, because of its possible side entrance, a feature which is characteristic of late prehistoric and protohistoric times. C.d. 3 is not rectangular in plan but could be a contemporary dwelling, as could any of the large western pits other than c.d. 19. Unfortunately, the shapes of none of the buried depressions are known; if they were, the size of the village might be more apparent.

Both c.d. 7 and 39 are rectangular in plan and may have been earth-embanked mat lodges set over rectangular pits, rather than circular, earth-covered pit houses. Mohs

(1978:51) has suggested that rectangular dwellings were introduced into the South Thompson valley from the western Shuswap basin where they are more common than circular depressions (Brown and Lundborg 1977:29). Since these rectangular dwellings increase in frequency in the South Thompson valley from west to east (Mohs 1978:Table 6.2), it may be that the South Thompson Band, rather than the Kamloops Band, made use of this type of structure. If so, EdQx 15 must have been occupied by members of the South Thompson Band during this final Kamloops phase settlement. This possibility is supported by the ethnographic statement that "formerly these people [the South Thompson Band] wintered from near the lower end of the lake [Little Shuswap Lake], along both sides of South Thompson River, as far west as Ducks [Monte Creek]" (Teit 1909:461).

Shuswap occupation of EdQx 15 ended with the last Kamloops phase settlement. There is no archaeological evidence for an indigenous Proto-historic or Historic occupation and the ethnographies make no mention of a village in this locality. Euro-american settlement of the mid-South Thompson valley began about 120 years ago (late 1850s) and the site became part of the Bostock Ranch in 1888. A storage shed-chicken coop stood in the vicinity of c.d. 45 from about 1928 to the mid-1960s, and c.d. 12 may have served as a root cellar in the 1940s. Relic collecting, vandalism,

and erosion of the river bank have plagued the site throughout this period. A final massive disturbance of the site took place in 1976 which led to the construction of a driveway and 3 buildings, and the destruction of approximately 53% of the site.

7. EVALUATION AND RECOMMENDATIONS

This short concluding section offers a brief assessment of the scientific and educational significance of the site. This assessment was necessary so that a long-range management plan could be developed for the site by the Heritage Conservation Branch. Lastly, 3 recommendations are proposed in this section regarding future archaeological work and the development of a heritage park at EdQx 15.

7.1. Site Evaluation

The evaluation of the scientific and educational significance of EdQx 15 follows the guidelines provided by the Heritage Conservation Branch (B.C. Ministry of Provincial Secretary and Government Services 1981).

7.1.1. Scientific Significance

Like any other site, EdQx 15 is the result of an unique set of human actions and natural processes. This singularity, however, should not mask the fact that similar events took place elsewhere in the study area at approximately the same time. None of the features found at EdQx 15 -- rectangular and circular house pits; single and clustered cache pits; underground ovens; and, possibly, burials, side house entrances, and subterranean tunnels -- are unique to

this site. Mohs' survey of the South Thompson valley revealed a rich and varied heritage resource (Mohs 1978), and all of the above features were observed at several sites.

Undoubtedly, EdQx 15 could yield more information on the archaeology of the Monte Creek locality. Fourteen of the cultural depressions exhibit little or no disturbance and an estimated 46.8% of the cultural deposits are still intact. Testing has also shown that preservation conditions are reasonably good, and that the cultural deposits contain dateable materials as well as a variety of archaeological specimens.

The alterations which have taken place at the site have, however, disturbed the archaeological deposits, and have limited the kinds of information that can be obtained. Large-scale movement of fill has led to the horizontal displacement of cultural material, and has made distributional studies both difficult and unreliable. Rodent activity, relic digging, and mechanical rotovation of the surface, have resulted in minor but unavoidable vertical mixing, making chronological assessment more difficult. The potential recovery of settlement data has also been reduced by the destruction of so many house pit rims, wall-roof junctures, and upper house pit walls, as well as by the possible destruction of the underground tunnels and the possible side entrance. Study of the open areas between depressions will

also not be possible in many parts of EdQx 15 due to the extensive disturbance of these areas.

It seems, therefore, that, the undertaking of additional archaeological research would not make a substantial contribution to our understanding of local and regional prehistory. Similarly, there is no evidence to indicate that the site could make an important contribution to paleoenvironmental or other scientific studies such as pedology, geomorphology, or botany. The site is also not particularly suited for experimental research although it could be used as a setting for developing data recovery techniques in disturbed archaeological contexts.

The presence of possible human remains is an important consideration in an assessment of site significance. There is, however, no archaeological evidence for a prehistoric cemetary at EdQx 15 even though a partial human cranium was surface collected. Several vandalized burial cairns have been reported just east of the site, and this area may have been used to inter the dead from EdQx 15.

7.1.2. Educational Significance

It appears that the site's potential for enhancing public understanding and appreciation of the human past is also severely limited. Only 18 cultural depressions can still be seen and 13 of these are small, visually

unimpressive storage pits or ovens. The 5 intact house pits are located at both ends of the site, thereby making village restoration and interpretation difficult. On the positive side, the site would illustrate the problems of site protection and heritage conservation.

The site setting, although pleasant, is not spectacular. The treed river bank provides a shady, cool escape from the summer heat. Otherwise, the area is exposed to summer heat and year round winds which can at times reach great velocity. The proximity of the railway tracks and houses and the use of the river by boaters further detract from the aesthetics of the site setting.

Furthermore, access to the site requires turning off the busy Trans-Canada Highway, crossing the C.P.R. railway tracks, and driving through the community of Monte Creek. This would create some danger to both visitors and residents, although this could be reduced by paving the road through the community, erecting an automatic barracade at the railway crossing, and constructing an east- and west-bound turning lane on the Trans-Canada Highway.

There is also a privately-owned right-of-way on the property which provides a local rancher with access to land east of the site. It is not clear what effect this right-of-way might have on possible site development.

Informal discussions with local residents revealed

considerable concern about the possible development of the Monte Creek site. An application for permission to construct a waterslide recreational facility near Monte Creek was recently rejected by the regional district, partly due to strong opposition by residents of Monte Creek who feared increases in traffic, noise, and water pollution. Similar concerns were expressed to the writer regarding the Monte Creek site development and considerable opposition could be expected from local residents to any development of the site.

7.2. Recommendations

The following management and research recommendations are proposed based on the preceeding evaluation of the site's scientific and educational potential.

RECOMMENDATION 1:. No additonal archaeological research should be carried out at EdQx 15 at this time.

The condition of the site has severely curtailed the kinds of research problems that could be investigated at EdQx 15 and would make future field work both more complex and more expensive. The absence of unique features means that similar cultural situations can be investigated elsewhere at a lower cost and with fewer complications. Should, however, the site be developed as a public use park, then

more archaeological research will be needed in order to add to the culture-historical understanding of the archaeological deposits. Further, if the land is sold for private development, then some additional archaeological work will be needed to achieve a more complete understanding of the archaeological remains of EdQx 15.

RECOMMENDATION 2: EdQx 15 should not be developed as a heritage and public education park.

This recommendation is based on a consideration of site condition, difficulties with access, and attitude of the local community towards development.

RECOMMENDATION 3: The Heritage Conservation Branch should consider development of a heritage park somewhere else in the greater Kamloops-South Thompson area.

Although the Monte Creek site will not make a good heritage and public education park, there is, in the opinion of the writer, a need for such a park in the vicinity of Kamloops as a device for increasing public awareness and appreciation of their local heritage. Such a park could be used by tourists, college and school groups, various clubs, and residents of Kamloops and other communities in this rapidly expanding population area. Development of such a park could, possibly, be carried out in conjunction with Cariboo

College and other local groups. There are several sites in the South Thompson valley which appear to be well suited for such a purpose given their location, condition, accessibility, aesthetics, and interpretability. The Heritage Conservation Branch is strongly urged to consider the purchase and development of an appropriate site while such sites are still available.

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APPENDIX I. BACKGROUND RESEARCH DATA SOURCES

This appendix lists the various documentary and other data sources consulted during the background research of stage 1 of the research plan. The sources are presented under four headings: maps and photographs, personal communications, artifact collections, and archaeological records. The bibliography at the end of this report lists the published and unpublished ethnographic, ethnohistoric, archaeological, geologic, and other sources which were used in this stage of the research.

Maps and Photographs

The following maps and photographs were consulted:

1. Scale site map surveyed by the B.C. Ministry of Transportation and Highways in April of 1976 (BCH map).
2. Site sketch map drawn by Arthur Charlton, March 16, 1976 (Charlton map).
3. Site sketch map drawn by Bill Brown in summer of 1974.
4. Composite color photograph of site taken by Arthur Charlton in July 1976.
5. Aerial photographs:
   (a) BC 622:24,25 taken July 2, 1948

(b) BC 1353:63,64 taken July 11, 1951

(c) BC 2436:16,17 taken June 18, 1958

(d) BC 2653:109-111 taken July 21, 1959

(e) BC 2698:17 taken September 9, 1959

(f) BC 4411:168-170 taken August 23, 1966

(g) BC 7640:98,99 taken August 26, 1974

Also consulted were the sketch maps attached to the site inventory forms for the Monte Creek site (see below).

Personal Communications

Discussions were held either face-to-face or on the telephone with the following people:

1. Ms. Abbey Bates, former archaeology student, Vancouver, B.C.
2. Mrs. Claire Bell, resident, Monte Creek, B.C.
3. Mr. Fred Bell, former land owner, Monte Creek, B.C.
4. Mrs. Anna Marie Bezdec, resident, Monte Creek, B.C.
5. Mr. Louis Bezdec, resident and collector, Monte Creek, B.C.
6. Mr. Michael Blake, archaeology graduate student, University of Michigan, Anne Arbor, Michigan
7. Mr. Randy Bouchard, anthropologist, B.C. Indian Language Project, Victoria, B.C.
8. Mr. John Cartwright, fish biologist, B.C. Ministry of the Environment, Kamloops, B.C.

9. Mr. Arthur Charlton, heritage manager, Heritage Conservation Branch, Victoria, B.C.
10. Mr. Larry Chmielewski, former land owner, Pritchard, B.C.
11. Mr. Wayne Everett, former land owner, Monte Creek, B.C.
12. Ms. Bernice Foard, former local resident, Edgewater, B.C.
13. Mr. Danny Foard, resident and collector, Pritchard, B.C.
14. Ms. Dariel Hill, resident, Monte Creek, B.C.
15. Ms. Dorothy I.D. Kennedy, anthropologist, B.C. Indian Language Project, Victoria, B.C.
16. Mr. Ray Kenny, heritage manager, Heritage Conservation Branch, Victoria, B.C.
17. Mr. James Miller, geomorphologist, Cariboo College, Kamloops, B.C.
18. Mr. Gordon Mohs, archaeologist, Chase, B.C.
19. Mr. Fred Nichol, resident, Monte Creek, B.C.
20. Mrs. Violet Nichol, resident, Monte Creek, B.C.
21. Dr. June Ryder, geologist, B.C. Ministry of the Environment, Victoria, B.C.
22. Dr. Albert van Ryswyk, soil scientist, Agriculture Canada, Kamloops, B.C.
23. Dr. Ken Taylor, biologist, Cariboo College, Kamloops,

B.C.

24. Dr. Mark Taylor, biologist, Cariboo College, Kamloops, B.C.

25. Mr. Derek Wales, former archaeology student, Chase, B.C.

26. Mr. David Williams, biologist, Cariboo College, Kamloops, B.C.

Artifact Collections

Three private artifact collections containing cultural items from EdQx 15 were examined:

1. Dennis Chmielewski collection, Pritchard, B.C.
2. Danny Foard collection, Pritchard, B.C.
3. Louis Bezdec collection, Monte Creek, B.C.

We were informed that a large collection owned by Mr. Robert Null of Clearwater, B.C. contains numerous artifacts from EdQx 15 but this collection was not viewed.

Archaeological Reports and Records

Only two unpublished archaeological reports mention the Monte Creek site (Mohs and Hoy 1973, Mohs 1978). Reference to EdQx 15 is also found on site inventory forms completed for EdQx 13, 14, 15, and 16 in 1973 by G. Mohs. A second form was submitted for EdQx 15 by B. Chisholm and G. Mohs in 1978.

APPENDIX II. DESCRIPTIVE ARCHAEOLOGY: THE EXCAVATIONS

This appendix provides a detailed account of the excavations that were undertaken at EdQx 15 in the summer of 1980. Sixteen cultural depressions were investigated by excavation, auger testing, and facing. Each depression is discussed individually in numerical order using the following headings: introduction, location and extent of excavation, stratigraphy, assemblage, features, age and cultural affiliation, condition, and, when applicable, comments. A brief discussion of the surface collecting and the auger testing completes the appendix.

As discussed in section 4.1., the purpose of these investigations was to determine the age, cultural affiliation, and condition of the cultural depressions in the sample (Table 3). The field work was also intended to provide at least a preliminary functional interpretation of each investigated depression. Further, it was necessary to verify the location of the buried cultural depressions in the sample.

Much of the terminology employed in this appendix follows standard archaeological usage. A brief comment is necessary, however, regarding some of the terms used in the sections on stratigraphy. The discussion of stratification has been influenced by the ideas of Edward Harris (1975,

1979) and some of his concepts and terms have been used in the text. Of note is the concept of the cut line as a stratigraphic unit reflecting a stratigraphic event. A cut line occurs whenever a deposit has been removed. The overlying deposits, if any, represent a subsequent depositional event. There are, therefore, no deposits associated with cut lines but cut lines nevertheless play an important role in stratigraphic interpretation. For our purposes, cut lines are referred to as layers and given layer numbers even though they are not a depositional unit.

The Munsell color system and numerical color designations were used to describe the sediment colors. In the field, the "Rock-color Chart" of the Geological Society of America was used and color names were taken from that chart. All color descriptions were made on damp samples. Particle size terminology follows the Wentworth scale (Shackley 1975), and sediment textures were described using the soil texture classification of Agriculture Canada (Canada, Department of Agriculture 1976). The description of sediment cohesion or consistence follows the scale in Shackley (1975:12-13). Moist sediments are classified as noncoherent (A0), very friable (A1), friable (A2), firm (A3), very firm (A4), and extremely firm (A5); dry sediments are loose (B0), soft (B1), slightly hard (B2), hard (B3), very hard (B4), or extremely hard (B5).

Lastly, non-cultural sediments at EdQx 15 are not described in the appendix each time they are mentioned because these deposits were very similar throughout the site. The non-cultural deposits consist primarily of a moist, very friable to firm (A1-A3), fine sandy loam to silty loam. They range in color from a pale yellowish brown (10 YR 6/2) to a light olive gray (5 Y 5/2). Gypsum and other alkalies are visible near the top of the profiles where evaporation is high, whereas iron oxide stains occur lower down the profiles. Mottles indicative of gleying are present in the lower moist zones. The soil at EdQx 15 is primarily a gleyed brown chernozem with an Ah, oxidized B, Cg, and Ccag horizon sequence (see section 2.2.).

CULTURAL DEPRESSION 1

C.d. 1 is one of 8 small cultural depressions grouped together at the western end of the site (Fig. 2). The sampling design required that one of these depressions, all of which belonged to sampling stratum #1 (Table 3), be tested. C.d 1 was selected because it was well defined and appeared not to have been disturbed. The surficial depression measured 2.31 m in diameter, was 31 cm deep, and had a rim 15 cm in height.

Location and Extent of Excavation: One 2 x 1 m unit was dug in the north-east quadrant of c.d. 1 to a depth of

90 cm below surface. It was aligned north-south to bisect the northern half of the depression along its north-south mid-line and to include the northern portion of the rim. Area excavated = 2.00 m^2; volume excavated = 1.56 m^3.

Stratigraphy: Excavations revealed a small pit directly underneath the surficial depression. It was filled with debris and had been dug into an old ground surface which also had been covered by debris. The deposits were moderately stratified and consisted of seven major layers (Fig. 11):

Layer 1: surface and turf.

Layer 2: well-defined, soft (B1), sandy silt with a high organic content and scattered charcoal and gypsum particles. Color is dusky yellowish brown (10 YR 2/2). This layer consists of sediments added to the pit after it had already been filled with layer 3.

Layer 3: heterogenous stratum; predominantly silty-clay loam, olive gray (5 Y 3/2) in color, slightly hard (B2), and moderately organic with charcoal and gypsum flecks throughout. Much of the sediment has been burnt and contains scattered fire-altered rock along with occasional concentrations of wood(?) ash and charcoal. Highly humic lenses occur with no consistent orientation throughout this layer, producing a complex microstratigraphy. Layer 3 is well defined except where it cuts through the upper dark

horizons of the non-cultural sediments (layer 7). Layer 3 fills much of the pit feature but is also found outside the pit where it intermixes with layer 6 and overlies the old ground surface (the top of layer 7).

Layer 4: poorly-defined, soft (B1), silty-clay loam, moderate yellowish brown (10 YR 5/4) in color, with a few charcoal flecks. It is found at the bottom of the pit and represents either original pit fill which was never taken out, or fill added to the pit after its original contents had been totally removed.

Layer 5: pit (feature #1) cut line.

Layer 6: thin stratum of burnt sediments, numerous charcoal fragments, and scattered fire-altered rock found on top of the old ground surface (layer 7) outside the pit. It is intermingled with layer 3. Layer 6 is associated with feature #2 and seems to be related to the event(s) responsible for layer 3.

Layer 7: non-cultural sediments. Outside the pit, the top of layer 7 is the original ground surface into which the pit (layer 5) was dug. The upper 15 cm of this layer contains numerous discontinuous laminae of naturally- accumulated black sodium salts which are easily mistaken for humic cultural layers.

Assemblage: Tables 11-19 quantify the cultural material recovered from c.d. 1. Euro-american artifacts were

found in the upper 14 cm of the stratigraphic section (layer 1 and upper parts of layers 2 and 3) and are a recent intrusion.

The indigenous cultural material can be divided into: (1) items from within the pit (feature #1) and (2) items from outside the pit. An antler wedge, a biface, and a retouched flake came from the pit whereas retouched and utilized flakes, and a possible boiling stone came from outside. All pieces of lithic detritus originated outside the pit. In contrast, almost all of the identifiable faunal pieces as well as about 40% of the unidentifiable bone chips came from inside the pit. Many of the bone fragments from outside the pit were associated with feature #2 and had been burnt. Almost half of the recovered fire-altered rock came from feature #2; two-thirds of the remainder came from throughout the pit (but not layer 4) and the other third originated from outside the pit but not in association with feature #2.

Features: n = 2.

#1. Refuse and/or Storage Pit: this is the pit underneath surficial c.d. 1. The pit is outlined by a well-defined cut line (layer 5) which becomes somewhat obscure near the top of the feature. The bowl-shaped pit appears to be circular or slightly oval in plan and has inward sloping sides and a slightly concave bottom. Estimated diameter is

ca. 2.40-2.60 m at the top and ca. 1.40-1.60 m along the bottom, and it has a maximum depth of 80 cm. The excavated portion of the pit was filled with three distinctive types of fill (layers 2, 3, and 4) and contained 3 artifacts, no lithic detritus, most of the recovered faunal and botanical remains, and about 45% of the fire-altered rock.

Originally, the pit seems to have served as a food cache which may also have held some tools if layer 4 (which contained the antler wedge) is original pit fill which was never removed. There is no evidence to support any other functions for the pit immediately after it had been dug. Subsequently, the cached food (and tools?) would have been removed (except for layer 4?), with the earth from the pit heaped either to one side or around the pit's periphery to form the rim.

After the pit was cleaned out, it was refilled with sediments and debris (layer 3), some of which also covered the surrounding ground surface. The volume of burnt sediments, ash, and fire-altered rock indicate that this material probably came from a cooking oven. It remains to be determined whether c.d. 1 or one of the nearby unexcavated cultural depressions served as that oven. Unlike other oven features (e.g., c.d. 46), no concentrations of fire-altered rock were found in the pit. Since it is unnecessary to remove the rock from the bottom of the oven to get at the

cooked food, it seems likely that layer 3 came from a pit other than c.d. 1. This interpretation is supported by the fact that neither the pit bottom nor sides were burnt.

#2. Rock Hearth, Oven, or Scatter: directly beside the pit on the old ground surface lay a scatter of charcoal and small fire-altered rock interspersed with burnt sediment, patches of wood(?) ash, the occasional charred and unburnt bone fragment, and several small pieces of charred wood, one of which was identified as Douglas-fir. The feature extended beyond the limits of excavation in three directions, showing up in the stratigraphic section as layer 6. The full extent of this scatter is unknown but it occupied 0.7 m^2 in the excavated unit. The 19 fire-altered rocks of the scatter consisted of various types of stone which ranged in size from 3.1 x 3.0 x 2.5 cm to 13.7 x 10.5 x 3.2 cm. They weighed a total of 2875 gm. The feature seems to consist of redeposited debris from an oven or hearth and probably represents a localized concentration of the more widely-scattered debris found in layer 3.

Age and Cultural Affiliation: A radiocarbon date of 450±80 years B.P. (SFU-32) was obtained on charcoal from layer 3 inside the pit approximately 20 cm above the pit bottom. The radiocarbon assay dates an inclusion in the pit fill and must post-date the excavation of the pit. Presumably, the interval between the two events was not great.

The historic items are, of course, of more recent age.

The radiocarbon date places the pit in the later part of the Kamloops phase. The small prehistoric assemblage cannot be assigned to any archaeological unit based on artifact styles alone. Clusters of small cultural depressions are characteristic of the Kamloops phase and this supports the Kamloops phase affiliation for c.d. 1 and, in all likelihood, for the other 7 small pits grouped with c.d. 1.

Condition: Gopher tunneling caused some stratigraphic disturbance both inside the pit and in the deposits which overlie the old ground surface. Damage was not, however, extensive, and an estimated 95% or more of the cultural depression is still intact.

CULTURAL DEPRESSION 3

This is a large and oval extant house pit located at the western end of the site (Fig. 2). It measures 9.9 m east-west by 11.1 m north-south and is 1.22 m deep. The surrounding rim averages about 46 cm high. It is the only cultural depression in sampling stratum #5 (Table 3).

Location and Extent of Excavation: A lack of time prevented us from undertaking a systematic examination of the depression. Instead, a single auger hole was drilled to a depth of 62 cm below surface. It was located in the south-east quadrant of c.d. 3 in the bottom of the

depression just north of its junction with the steeply-sloping side. Area excavated = 0.04 m^2; volume excavated = 0.02 m^3.

Stratigraphy: With the aid of a flashlight, 4 major stratigraphic units could be seen in the sides of the auger hole:

Layer 1: surface, turf, and soft (B1), humic, moderate brown (5 YR 3/4), sandy silt, 0-15 cm below surface. This layer appears to have been disturbed.

Layer 2: slightly hard (B2), dark yellowish brown (10 YR 4/2), silty loam with charcoal flecks, 15-42 cm below surface.

Layer 3: the assumed cut line of c.d. 3 at the bottom of the cultural deposits, 42 cm below surface.

Layer 4: non-cultural sediments which underlie layer 3.

Assemblage: A very small assemblage was recovered from the auger hole (Tables 11-19). It included 3 artifacts (2 stone bifaces and a modern iron bolt), 5 pieces of lithic detritus, and a fish vertebra.

Features: n = 0.

Presumably layer 4 is the cut line for the large house pit feature which must exist below the c.d. 3 surficial depression. Not enough of this pit was exposed,

however, to warrant its formal designation as a feature.

Age and Cultural Affiliation: No age estimation is possible due to the small artifact assemblage which was obtained as well as the lack of dateable material. Presumably the modern iron bolt is intrusive to c.d. 3 and does not reflect the age of the depression. Apparently, a collector in the early 1960s recovered several antler digging stick handles, a hand maul, a pecked stone bowl, and many other artifacts from c.d. 3. Unfortunately, the 2 aboriginal artifacts which came from the auger hole are not characteristic of any archaeological unit. The size of c.d. 3, its high rim, and its proximity to the river are characteristic of the Kamloops phase but additional work will be necessary to definitively determine its cultural affiliation.

Condition: C.d. 3 was not disturbed during the 1976 land alterations. It may, however, have been subjected to considerable digging by collectors seeking artifacts. According to one local resident, c.d. 3 had been looted at least 5 times during the last 2 decades. The auger probe indicated that there are a least 42 cm of cultural deposits below the surficial depression of c.d. 3 and that the top 15 cm may be somewhat disturbed or mixed, possibly due to digging by relic collectors. Several low and irregular mounds occur on the surface of the depression and they are commonly found in looted archaeological sites in this area.

The iron bolt further indicates that c.d. 3 has been recently disturbed, but it is impossible to know the extent of that disturbance without further field work. A tentative estimate of 60% intact deposits is proposed (Table 4).

CULTURAL DEPRESSION 7

C.d 7 is an extant, medium-sized, rectangular depression located in the western end of the site (Fig. 2). It has a flat bottom, steep sides, rounded corners, and a high rim (Table 4), and it measures 8.7 m east-west, 9.2 m north-south, and 0.9 m in depth. The depression was partially filled in 1976 when its eastern rim was levelled and pushed into the depression. It was the only depression of its type in the sampling design (stratum #3) (Table 3) and was, therefore, selected for testing.

Location and Extent of Excavation: Two 2 x 1 m units and one 1 x 1 m unit were separated by 1 x 1 m baulks in a north-south trench through the middle of c.d. 7 (Fig. 12). These units were dug to a depth of up to 130 cm below surface. A second 1 x 1 m unit was added to this trench on the northern rim of the depression and separated from the adjacent unit by a 50 cm baulk. It had to be abandoned at a depth of 50 cm below surface when the field season came to an end.

A 0.3 x 0.4 m extension was added to the east side of

the most southerly unit so that a partially exposed calf skull could be removed. Similarly, a 1.0 x 0.5 m extension was added to the east and west sides of the northern 1 x 2 m unit. The eastern extension revealed more of c.d. 53, which was located underneath c.d. 7, and the other extension uncovered a rock cluster (feature #4) which was also located below c.d. 7. Area excavated = 7.12 m^2; volume excavated = 3.81 m^3. The volume calculation does not include c.d. 53.

Stratigraphy: Excavations revealed a shallow, poorly-defined, house pit directly below surficial c.d. 7. A simple macrostratigraphy of 6 layers was evident (Fig. 13):

Layer 1: surface and underlying olive gray (5 Y 3/2), slightly hard (B2), sandy silt with humic lenses and some charcoal. This layer is partly due to slumping but may also include the remains of the collapsed superstructure.

Layer 2: light olive gray (5 Y 5/2), sandy silt varying in coherence from very friable (A1) to friable (A2), with scattered charcoal flecks and occasional fire-altered rock. This layer is primarily floor debris.

Layer 3: house pit (feature #1) cut line.

Layer 4: storage pit (feature #2) cut line.

Layer 5: cut line of the shallow pit associated with the rock cluster (feature #3).

Layer 6: non-cultural sediments.

Cultural deposits predating the construction of the house were encountered in two areas along the northern edge of the house pit. In the northeast corner of the trench, the lower portion of a refuse and/or storage pit was uncovered, the top having been removed by the excavation of the house pit. Because this storage pit was not associated with the occupation of the house, it was treated as a separate cultural depression (c.d. 53). It is discussed later in this appendix.

In the northwest corner of the trench, a poorly stratified cultural matrix (layer 7) was exposed next to the northern house pit wall. These deposits predate the house and may have been part of an earlier cultural depression. Because this is not certain, however, these deposits were not given a separate cultural depression designation and they will be included in the discussion of c.d. 7.

Layer 7: highly organic, non-coherent (A0) to friable (A2), grayish yellowish brown (10 YR 3/2), sandy silt with lenses of moderate yellowish brown (10 YR 5/4) sandy silt. It is very heterogeneous and has a complex microstratigraphy. Because the house pit cut line (layer 3) is indistinct in this area, the divide between the house and pre-house deposits was difficult to locate precisely.

Assemblage: Tables 11-19 quantify the recovered cultural material from c.d. 7. The 20 Euro-american objects

came primarily from the upper 20 cm (the top of layer 1) in the central and southern part of the depression, although a few pieces were found lower down in gopher tunnels and looter's holes. The indigenous artifacts originated primarily from the floor periphery and included 2 Kamloops style side-notched points (Fig. 20b,d) and a bear baculum pin(?) (Fig. 22h) from the storage pit (feature #2). A short Kamloops style point (Fig. 20e) came from the pre-house deposits above the rock cluster (feature #4) as did a larger corner-notched point (Fig. 20g) and a basalt endscraper.

C.d. 7 yielded almost 2.5 kg of animal bone including the remains of dog, coyote, deer, beaver, squirrel, vole, mouse, goose, duck, goshawk, fish (probably salmon), and sucker. Deer and fish bones came from the pre-house deposits. Freshwater mussel shell was present in small amounts both in the house and in underlying layer 7. Pig and cattle bones were also recovered and are, obviously, a recent addition to the house pit. Unidentifiable bone fragments were frequent in all strata but antler was absent.

Excavations also produced just over 30 kg of fire-altered rock, about half of which came from feature #4. The other fire-altered rocks were scattered throughout the house (10.2 kg) and pre-house deposits (3.7 kg) with no apparent concentrations.

Features: n = 4.

#1. House Pit: this large pit is recorded surficially as c.d. 7 and is located immediately below the surficial depression. Defined by the layer 3 cut line, it is interpreted as a house pit because of its size, profile, and associated cultural material. Excavation of the northern rim revealed an inward sloping pit wall (or side) along with a bench or storage shelf around the top of the wall and extending underneath the rim. The wall/floor juncture is located about 1.2 m in from mid-rim, resulting in a floor area somewhat smaller than the surficial depression. The trench did not completely section the house pit, but an approximate north-south dimension of 7.0 m can be inferred from what was exposed. The floor is almost level and the pit is at least 55 cm deep.

Features associated with the house pit consist of a storage and/or refuse pit (feature #2) and a rock cluster in a shallow pit (feature #3). A wide range of artifactual, faunal, and other cultural material also came from this house. Presumably the house pit is rectangular in shape and has rounded corners, similar to that of the surficial depression.

#2. Storage and/or Refuse Pit: a small pit located in the house floor at the base of the northern wall. It probably served as an interior storage cellar. The pit is delineated by a well-defined cut line (layer 4) which is

apparently contemporaneous with the excavation of the house pit. Although not fully excavated, the pit appears to have an irregular, circular shape with a diameter of approximately 90 cm. It is 55 cm deep, and has an almost flat bottom with slightly sloping sides.

The pit's contents appear to have been removed; the pit was subsequently filled with layer 2 sediments and debris consisting primarily of bone chips (including deer, fish, vole, and mouse bones, and a few freshwater mussel fragments), but also including 7 pieces of lithic detritus, 2 segments of a broken, bear baculum pin(?), small charcoal pieces, and 625 gm of fire-altered rock. This debris was scattered throughout the pit and indicates the pit's use as a trash receptical.

#3. Rock Cluster (in a pit): 6 fire-altered rocks were found in a shallow pit in the floor of the house about 2 m from the southern wall. The orbicular, straight-sided pit measured 36 cm north-south, 23 cm east-west, and 13 cm in depth, and was outlined by the layer 5 cut line. The 5 angular and one round rocks were loosely packed beside and on top of one another in the pit. The rocks ranged in size from 16 x 9 x 5 to 9 x 5 x 3 cm and consisted of 2 large and 4 smaller specimens. All displayed some thermal fracturing. In addition to the rocks, the pit contained 5 small fragments of unburnt bone as well as layer 2 sediments.

The pit was first noticed stratigraphically 4 cm above the house floor during the excavation of layer 2. Assuming that the pit did not originate higher in the deposits, it must have been dug during the deposition of layer 2. The function of this feature is unknown but seems to have been associated with heat.

#4. Rock cluster: a concentration of 22 round and sub-angular rock were uncovered below the house pit in layer 7 directly on top of the non-cultural sandy silts of layer 6. Eighteen rocks were placed in an oval to almost triangular configuration which measured 57 cm northwest-southeast by 47 cm northeast-southwest. Four outlier stones enlarge the dimensions to 61 cm northwest-southeast by 65 cm northeast-southwest. The rocks range in size from 22 x 10 x 10 to 5 x 4 x 2 cm. Except for the outlier stones, all touched one another or were only a few centimeters apart. Although densely packed around the periphery of the cluster, none of the rocks were piled on top of one another. Burnt sediments and charcoal flecks were found among and underneath the rocks but no artifacts or other cultural items were associated with this cluster. Some of the rocks had been thermally fractured.

Because of a lack of associations and uncertainty of stratigraphic context, the function of this cluster remains unknown. It appears to have been used with heat, possibly

for cooking, but this is not certain. If the associated deposits are part of a buried pit similar to c.d. 53, the cluster may represent a cooking feature in the bottom of a pit.

Age and Cultural Affiliation: a radiocarbon date of 200±80 years B.P. (SFU-33) was obtained on charcoal from layer 2 directly on the floor in the southern part of the house. This date is supported by a radiocarbon date of 530±80 years B.P. from c.d. 53 which underlies the house. The date for c.d. 7 falls within the range attributed to rectangular cultural depressions in the South Thompson valley (see section 6.2.).

The 2 Kamloops style side-notched points from c.d. 7 are diagnostic of the Kamloops and Proto-historic phases. The absence of Euro-american trade objects, however, is indicative of a prehistoric Kamloops phase occupation. The radiocarbon date and rectangular shape of the house suggest a late Kamloops phase affiliation.

Conditiion: an estimated 80% of the house deposits are still intact (Table 4). Gopher burrowing and artifact looting has been responsible for much of the damage although the 1976 levelling of the eastern rim also caused some localized destruction. Gopher tunnels and collector's shovel holes riddle the deposits and have resulted in some artifact mixing. A calf was also buried in the southern half of c.d.

7, thereby adding to the mixing.

Comments: The rectangular shape and rounded corners of the surficial depression is reminiscent of Boas' description of a winter mat lodge (see section 3.1.). C.d. 7 is considerably larger than Boas' lodge but it has the same depth. The presence of only 15 cm of fill on the floor in the center of the house may indicate that the dwelling did not have an earth-covered roof. The absence of posts and post holes may also be indicative of a light pole and mat superstructure set outside the pit, but this may be a sampling or preservation problem. Less than 20% of the floor area has been excavated and the structural evidence could be located elsewhere in the house. Also, the poles may have been removed for use at another location, thereby reducing the possibility that they could be detected archaeologically. Two days after a large fench post was removed by our crew from the rim of c.d. 7 no traces of its former presence could be detected stratigraphically. The prehistoric post holes may have suffered a similar fate.

Regardless of the type of dwelling c.d. 7 may have been, it probably was not unique because similar sized rectangular and square depressions have been recorded at several locations in the South Thompson valley (Mohs 1978: Table 6.2.). The possibility that this structure was inhabited by members of the South Thompson Shuswap band was discussed in

section 6.3.

CULTURAL DEPRESSION 11

This cultural depression is one of several large buried depressions located at the western end of the site (Fig. 5). According to the Charlton map it may have had a side entrance. Even though c.d. 11 had been buried in 1976, its approximate size and location were known from the BCH map and from the Charlton map. C.d. 11 was about 11.6 m in "diameter", and 1.5 m in depth, and had a rim build-up of 60 cm. This is the only cultural depression in sampling stratum #7.

Location and Extent of Excavation: The location of the buried depression was calculated from the BCH map. One 2 x 1 m unit was dug to a depth of 110 cm below surface along the estimated north-south mid-line of the buried depression. It was located just inside the southern rim so that the unit might bisect the edge of the depression and might expose the possible side entrance. A second 2 x 1 m unit was started 1.0 m north of the other unit but it was abandoned at 20 cm below surface while still in cultural sediments due to a lack of time. A single auger hole was drilled 2 m east of the excavated unit to help determine the precise location of the depression. It reached a depth of 100 cm without encountering the bottom of the cultural

deposits. Area excavated = 4.04 m^2; volume excavated = 2.64 m^3.

Stratigraphy: A relatively simple stratigraphic section consisting of 6 major layers was exposed (Fig. 14):

Layer 1: ground surface and associated turf.

Layer 2: well-defined, slightly hard (B2), dark yellowish brown (10 YR 4/2), silty loam with scattered fire-altered rock and pieces of charcoal. Turf inclusions occur throughout this humic layer which consists of disturbed and mixed fill bulldozed into the surficial depression in 1976.

Layer 3: moderately well-defined, soft (B1), silty loam ranging in color from dark yellowish brown (10 YR 4/2) to dusky yellowish brown (10 YR 2/2). Charcoal fragments and fire-altered rock are scattered throughout. Layer 3 was the uppermost deposit within c.d 11 before the depression was filled in 1976. Layer 3 consists of undisturbed prehistoric deposits except for the top few centimeters where recent digging, possibly by people looking for artifacts, has resulted in the inclusion of modern artifacts.

Layer 4: moderately well-defined, hard (B3), moderate yellowish brown (10 YR 5/4), silty loam with scattered charcoal pieces but no fire-altered rock. This is an undisturbed layer at the bottom of the cultural depression.

Layer 5: house pit (feature # 1) cut line.

Layer 6: non-cultural sediments.

Assemblage: Fourteen artifacts came from the two disturbed layers (1 and 2) and included 7 items made of glass, metal, and other modern materials. Two projectile points--one side-notched arrow point (Fig. 20c) and one unfinished large corner-notched point (Fig. 20h)--were among the aboriginal artifacts from layers 1 and 2. Layers 3 and 4 yielded only 7 artifacts including a side-notched arrow point (Fig. 20f), a pentagonal biface (Fig. 21c), and a flake core. All stone tools were made of basalt. About half of the lithic detritus (Table 14) came from layers 1 and 2 and another third came from layer 4.

Skeletal elements from caribou, deer, skunk, and mountain vole were recovered from the disturbed zone (layers 1 and 2). A sawn calf bone came from the upper part of layer 3 which has been disturbed by relic collectors. The intact deposits yielded the remains of red fox and northern pocket gopher. About 37 tiny shell fragments, presumably from freshwater mollusks, were noted in layer 2 but these were too small to be identified. The auger test produced 6 bone chips and 2 fragments of shell.

A total of 11.6 kg of fire-altered rock was recovered. Layer 4, although cultural, did not contain any.

Features: n = 1

#1. House Pit: this large buried pit is bounded by

the layer 5 cut line and corresponds to the c.d. 11 surficial depression. Excavations indicate that the pit is probably circular or oval in plan but they were too limited to permit us to confirm the pit's dimensions. There is no evidence, however, to suggest that the dimensions given on the BCH map are incorrect. The stratigraphic section (Fig. 14) shows that the pit must have been at least 105 cm deep, but it may have been considerably deeper depending on how much of the rim was destroyed during the 1976 bulldozing. We should further note that the bottom of the pit slopes down towards the north, indicating that the deepest part of the pit, which is usually near its center, was not exposed in the excavations.

The pit appears to have a slightly concave bottom with a steep, inward-sloping side. The inward taper of the side changes noticeably as it nears the bottom (Fig. 14), resulting in a less acute side-bottom juncture. A distinctive horizontal cut into the non-cultural floodplain sediments at the southern limit of excavation may mark a step or bench in the side of the pit, or it may be part of the side entrance noted on the Charlton map.

The pit is interpreted as the remains of a large semi-subterranean dwelling because of its size and the absence of contrary evidence. The bottom of the pit would have served as the house floor; the steep pit side would

have been the wall with a possible step, bench, or side entrance. Layer 4 may represent floor debris but this is not certain as this layer rises quite high against the wall "bench". Layer 3 may consist of the collapsed superstructure and associated earth cover.

Age and Cultural Affiliation: No radiocarbon dates were obtained on c.d. 11 but both the intact and disturbed deposits yielded artifacts diagnostic of the Kamloops phase. These artifacts are side-notched arrow points from layer 2 (Fig. 20c) and from layer 3 (or 4) (Fig. 20f), and a pentagonal biface (Fig. 21c) from layer 4. C.d. 11 seems to have been occupied during the Kamloops phase and all the overlying fill, except for the intrusive modern artifacts and calf bone, also date from this period. The large size of c.d. 11, its high rim, and its proximity to the river are also characteristic of the Kamloops phase.

Condition: The 1976 filling of the c.d. 11 surficial depression seems to have destroyed most, if not all, of the fairly high pit rim. It may also have removed a few centimeters from the top of the house wall directly below the rim. This material ended up both inside and outside the surficial depression. The bulldozing did not, however, disturb the cultural deposits elsewhere in the house and an estimated 80-85% of the house deposits remain intact underneath the zone of disturbed and mixed sediments (Table 4).

Gopher tunneling caused some disturbance of the deposits, notably in layer 3 but the damage was minor, especially when compared with c.d. 19.

Comment: The excavations and the auger test confirmed the existence of a large buried cultural depression in the approximate location marked on the BCH map for c.d. 11. Although the exact size and shape of the depression could not be determined, no evidence contrary to the information given on the BCH map was uncovered. The excavations may also have uncovered the side entrance observed by Charlton but additional work will be needed to substantiate this possibility.

CULTURAL DEPRESSION 19

C.d. 19 is another large buried cultural depression located at the western end of the site (Fig. 5). It is marked on the BCH map and had a "diameter" of 10.9 m, a depth of 1.2 m, and a rim height of 30 cm. C.d. 19 was one of three cultural depressions in sampling stratum #6; its selection for excavation was arbitrary.

Location and Extent of Excavations: The location of the buried depression was calculated from the BCH map. Two 2 x 1 m units separated by a one meter baulk were placed so as to bisect the northern half of c.d. 19 along its north-south mid-line. Excavation of the northern unit was

abandoned while still in cultural fill at 40 cm below surface when it became evident that we did not have sufficient manpower to finish all the units which were started. The other unit was dug to non-cultural deposits at 123 cm below surface. Area excavated = 4.00 m^2; volume excavated = 3.26 m^3.

Stratigraphy: A complex and badly disturbed stratigraphic section emerged during excavation. Seven major strata could be delineated (Fig. 14):

Layer 1: ground surface and underlying sloping layer of friable (A2), dark yellowish brown (10 YR 4/2), sandy silt with lenses of olive gray (5 Y 4/1) sandy silt, scattered charcoal, fire-altered rock, and numerous pieces of buried turf. Lenses and turf inclusions make up almost 50% of this layer, resulting in a complex microstratigraphy. Layer 1 consists of fill pushed into the surficial depression in 1976.

Layer 2: thin sloping stratum of moderately well-defined, olive gray (5 Y 4/1), friable (A2), sandy silt with a high humic content but with considerably less thermally-cracked rock and charcoal than layer 1. Before the recent addition of layer 1, the top of layer 2 formed the ground surface and the original surficial depression. The uppermost part of layer 2 appears to have been disturbed by digging, possibly by people looking for artifacts.

Layer 3: poorly-defined sloping layer of dark yellowish brown (10 YR 4/2), friable (A2), sandy silt with a moderate humic content, scattered charcoal flecks, and the occasional piece of fire-altered rock. This is the second layer of fill underneath the original surficial depression.

Layer 4: moderately well-defined layer similar in coherence and texture to layer 3 but with a noticeably higher humic content and a slightly darker dusky yellowish brown (10 YR 2/2) color. This thin layer lies directly on the pit cut line (layer 5) and must have been deposited in the depression shortly after it had been excavated.

Layer 5: house pit (feature #1) cut line.

Layer 6: non-cultural sediments.

Layer 7: moderately well-defined, friable (A2), mottled sandy silt, predominantly moderate brown (5 YR 3/4) in color and with the occasional piece of charcoal. This layer appears only in the unfinished northern unit directly underneath layer 1 and it does not correspond to any of the strata below layer 1 in the other unit. Layer 7 is probably a variant of either layer 2 or 3 because of similarities in texture, coherence, stratigraphic position, and, to a lesser degree, color.

Assemblage: Tables 11-19 quantify the cultural material recovered from c.d. 19. The 31 Euro-american objects came from layers 1, 2, and, possibly, 7. Most of the

indigenous artifacts came from layers 1 and 2 which are badly disturbed and contain a mixture of prehistoric and historic objects. Of note among the native artifacts are a chipped, zoomorphic(?) eccentric (Fig. 22f) and a chalcedony sidescraper from layer 1, and a fragmentary, barbed and corner-notched, chipped dart point from layer 7 (Fig. 20j). An antler haft and four biface fragments were among the other artifacts recovered.

The lithic detritus was well distributed among all cultural layers. Almost 20 kg of thermally-cracked rock were also recovered, approximately 80% of which came from the disturbed layers.

Less than 15% of the faunal remains came from the undisturbed lower layers and included mature deer and a juvenile bighorn sheep(?). The disturbed and mixed upper strata yielded remains of wolf, coyote, dog, elk, deer, beaver, domestic cattle, mountain vole, grebe, two unidentified small birds, and fish. Many of the cow bones had been cut with a metal saw. Tiny flakes of shell, presumably from freshwater mollusks, were noted in the disturbed strata, but were not observed in the lower layers.

Features: n = 1

#1. House Pit: this feature consists of the large house pit outlined by the layer 5 cut line. The top of this pit corresponds to the large surficial depression (c.d. 19)

which was buried in 1976. It is impossible to determine the pit's exact dimensions or shape from the limited excavations which were undertaken, but there is no archaeological evidence in disagreement with the general location or dimensions given on the BCH map. That part of the pit which was tested had a maximum depth of 115 cm whereas the surficial depression was only 65 cm deep if the top of layer 2 represents the old ground surface. The fact that the bottom of the pit slopes down towards the south indicates that the deepest part of the depression lay beyond the limit of excavations and would result in a deeper pit. The original depth of the surficial depression may also have been reduced somewhat by the removal of the rim during land alterations in 1976, thereby further obscuring the true depth of both the surficial depression and the underlying pit.

Like c.d. 11, the size and stratigraphy of c.d. 19 indicates that this large depression probably served as semi-subterranean dwelling with the layer 5 cut line defining the walls and the floor of the house pit. There was not enough of the pit exposed to permit a reconstruction of the pit's sides or bottom. Layer 4 consists of floor debris whereas layers 2 and 3 probably represent the collapsed superstructure and associated earth cover. The presence of recent metal, glass, sawn cattle bones, and other objects in layer 1 and in the top of layer 2 indicates that the

surficial depression may have been used as a trash dump in modern times, a conclusion supported by reports supplied by local informants.

Age and Cultural Affiliation: A radiocarbon assay of 1450±80 years B.P. (SFU-35) was received on charcoal from layer 4 directly above the bottom of the house pit. This date falls within the time span of the Thompson phase. The projectile point from disturbed(?) layer 7 (Fig. 20j) is characteristic of the Thompson phase and the sidescraper from disturbed layer 1 is similar to a scraper from c.d. 25, a Thompson phase house pit.

The artifact assemblage from the undisturbed strata, however, is very small and does not include any diagnostic types. House size and its proximity to the river are characteristic, however, of the Kamloops phase. As a result, the house and the intact deposits are tentatively assigned to the Kamloops phase whereas the disturbed fill may date to the Thompson phase. If so, the disturbed material probably came from outside c.d. 19, although no other Thompson phase deposits are known from this part of the site.

Condition: The 1976 land alterations seem to have impacted c.d. 19 in a manner similar to c.d. 11. The rim of the depression has been totally removed and the surficial depression has been filled. The original house deposits, however, are largely undisturbed except near the rim. Up to

35 cm of cultural deposits may have been removed around the edge of the house directly below the rim during the 1976 bulldozing but this is not certain and could be considerably less. Gopher tunnelling is responsible for considerable mixing of both the disturbed and intact deposits. Burrows and tunnels were everywhere and c.d. 19 displayed the most severe gopher disturbance at the site. An estimated 60% of the deposits are still intact (Table 4).

Comments: The excavations confirmed the existence of a large, buried cultural depression in the approximate location indicated on the BCH map. Because the intact layers in c.d. 19 slope down towards the east and the south, the two excavation units must have been placed in the northwest quadrant of the depression and the center of c.d. 19 must be located slightly east and south of the spot indicated on the BCH map.

CULTURAL DEPRESSION 24

This large cultural depression is located on the central knoll (Fig. 2). Much of it was destroyed in 1976 during the construction of the road. According to the BCH map, c.d. 24 was a large but shallow, rimless depression measuring 11.9 m in "diameter" and 60 cm in depth. Because of the probability that parts of the depression were still intact next to the road, c.d. 24 was included in the

sampling design. It was automatically selected for excavation because it was the only member in sampling stratum #10 (Table 3).

Location and Extent of Excavation: The eastern edge of c.d. 24 can still be seen in the low cut bank just east of the road. The bank was shovel faced, revealing a poorly-defined and disturbed outline of a large buried house pit. Because of the possibility of intact c.d. 24 deposits to the west of the road, no excavations were undertaken along the cut bank. Instead, a single 2 x 1 m unit was placed immediately west of the road. It did not locate c.d. 24, but it did find another buried cultural depression (c.d. 45) which was not shown on the BCH map. C.d. 45 is discussed later in this appendix.

Stratigraphy: A poorly-defined pit outline was evident in the cut bank. Five major stratigraphic units could be recognized:

Layer 1: surface and thin layer of recently disturbed, moderately loose (B2), dark yellowish brown (10 YR 4/2), sandy loam. This is the 1976 rotovation zone.

Layer 2: dark yellowish brown (10 YR 4/2), soft (B1), sandy silt loam with humus inclusions and scattered pieces of charcoal and mussel shell. This layer consists of house pit fill. Floor and roof deposits could not be differentiated.

Layer 3: house pit (feature #1) cut line.

Layer 4: storage(?) pit (feature #2) cut line.

Layer 5: non-cultural sediments.

Assemblage: No cultural material was recovered from c.d. 24.

Features: n = 2.

#1. House Pit: The pit outlined in the bank by the layer 4 cut line is approximately 6 m long (northeast-southwest) and 70 cm deep. Its profile and size are typical of EdQx 15 house pits. The floor is somewhat concave and the 50(?) cm-high wall slopes gradually inward. A storage shelf may be present around the top of the wall but this could not be verified.

#2. Refuse and/or Storage Pit: a bowl-shaped pit was located in the house floor next to the southern wall and may have served as an interior storage pit. It was delineated by the layer 4 cut line and had sloping sides and a concave bottom. It is 30 cm deep and no more than 90 cm in diameter.

Age and Cultural Affiliation: No age estimates were possible. Using the dimensions given on the BCH map, the size of the former surficial depression is typical of Kamloops phase depressions whereas its depth, absence of rim, and saucer-shaped profile are characteristic of the Thompson phase. The house is located away from the river

and close to other Thompson phase houses, suggesting a probable Thompson phase affiliation for c.d. 24.

Condition: An estimated 80% of c.d. 24 was destroyed in 1976 during the construction of the road. The remaining 20% lies buried immediately east of the road. This area was also rotovated in 1976.

CULTURAL DEPRESSION 25

C.d. 25 is a medium-sized house pit located on the knoll in the central part of the site (Fig. 5). Much of the house pit was destroyed in 1976 and it is no longer visible surficially. What is left of c.d. 25 can be seen in profile in the cut bank along the road. According to the BCH map, c.d. 25 was a rimless depression 7.9 m in "diameter" and 30 cm deep. C.d. 25 was selected for excavation from sampling stratum # 9 (Table 3) because of its accessibility.

Location and Extent of Excavation: A 2 m long section of the cut bank was selected for investigation. The section was first faced and the slumpage at the base of the bank was removed. The section was then dug back about 90 cm to the 33N grid line, in effect creating a 3-sided excavation unit which measured 2.0 m by ca. 90 cm. The latter dimension varied by $\pm$ 10 cm because of irregularities in the cut bank. Excavations attained a maximum depth of 130 cm below surface.

In addition, 3 auger holes were drilled in a north-south line just behind the cut bank to determine the location of the house pit's southern edge. These 3 holes reached depths of 102, 77, and 61 cm below surface. Area excavated = 1.91 m^2; volume excavated = 1.36 m^3.

Stratigraphy: The western edge of a buried house pit was clearly visible in the excavation unit. Five stratigraphic units could be delineated (Fig. 15):

Layer 1: surface and underlying thin layer of recently disturbed, moderately loose (B2), dark yellowish brown (10 YR 4/1), sandy loam with a high humus content and scattered charcoal flecks.

Layer 2: mottled, soft (B1), dark yellowish brown (10 YR 4/2), sandy silt loam with occasional pieces of charcoal and several lenses of burnt sediments and concentrated charcoal. The upper 20 cm are more cohesive (B2-3), possibly due to greater moisture evaporation. This layer consists of the house deposits along with fill pushed into the depression in 1928(?) and 1976.

Layer 3: house pit (feature #1) cut line.

Layer 4: non-cultural sediments.

Layer 5: refuse and/or storage pit (feature #2) cut line.

Although the approximate location of the rest of the house pit could be seen in the unfaced cut bank, weathering

and slumping have obscured the pit to such a degree that no delineation of strata and no recognition of features was possible.

Two of the auger holes were drilled inside the house pit. One hit the possible storage pit (feature #2) and encountered a stratigraphic sequence of layers 1, 2, 5, and 4. The other was drilled through the house bench and displayed a layer sequence of 1, 2, 3, and 4. The hole located outside the house pit found only layers 1 and 4.

Assemblage: Tables 11-19 quantify the cultural material recovered from c.d. 25. The 3 historic items came from the slumpage. The artifacts and other cultural material from the house pit came primarily from the upper and lower 15 cm of layer 2. The latter is probably floor debris as it lies directly on the house floor. The origin of the upper material is not clear but may be due to post-occupational slumping into the former surficial depression.

Identifiable faunal remains were limited to fish vertebrae from the house floor. No antler was encountered but bone chips and fragments of mussel shell occurred throughout the deposits. Fire-altered rock was not observed.

Features: n = 2.

#1. House Pit: this house pit is recorded as surficial depression 25 on the BCH map. It is considered a house pit because of its size, profile, and associated cultural

material. The pit must have been circular or oval in shape based on the pit's curvature as exposed during excavation. What remains of c.d. 25 in the cut bank has an east-west dimension of 6.6 m. This is not, however, an accurate indicator of its former size because its point of maximum width has been destroyed.

The house pit is marked by the layer 3 cut line and has a level floor, an almost vertical side or wall 27 cm high, and a 68 cm-wide bench or shelf around the top of the pit (Fig. 15). Ethnographically, benches such as these were located underneath the lower portion of the sloping roof and were used for storage. Presumably, this bench had a similar purpose and marks the approximate location of the roof/pit juncture. This juncture may possibly be seen in the stratigraphic section (Fig. 15). Another feature associated with the house is a round refuse and/or storage pit (feature #2) in the floor next to the wall.

#2. Refuse and/or Storage Pit: a round pit was unearthed in the southeast corner of the excavation unit and was also encountered in the auger hole located immediately behind the cut bank. It is defined by the layer 5 cut line. The presence of the pit in the auger hole indicates that the pit must be located adjacent to the house wall; the apparent space between the pit and the house wall in Fig. 15 is the result of the curvature of the house wall and does not imply

that the pit is located some distance from the wall.

Not enough of the pit was exposed to allow determination of its size. If the location of the auger hole is considered, the pit must be at least 50 cm in diameter and could be considerably more. It has sloping sides and a concave bottom and is 50 cm deep.

The pit contained layer 2 fill and yielded 2 bone splinters and the occasional piece of charcoal. In all probability, this feature is a cleaned out storage pit that may have been subsequently used as a trash pit. More of the pit will have to be dug before a final functional interpretation is possible.

Age and Cultural Affiliation: A radiocarbon date of 1760±130 years B.P. (SFU-37) was obtained on charcoal from the possible storage pit (feature #2) in the floor. This date places the house within the time span of the Thompson phase. Thompson phase affiliation is also indicated by the distance of the house from the river, its proximity to other Thompson phase houses such as c.d. 26, the shallowness of the cultural depression, absence of the rim, and the higher incidence of cryptocrystallines (33% for the house deposits). The depth of the depression as well as the absence of the rim could, however, be due to the 1928(?) levelling of the knoll and may not be characteristic of this house. The house is also somewhat large for a Thompson phase house pit

as most do not exceed 7 m in diameter (T. Richards 1981).

Possibly diagnostic of the Thompson phase is the scraper (Fig. 22c) from the upper part of layer 2. A similar scraper was found in c.d. 26.

Condition: A large portion of c.d. 25 has been destroyed and only 20% of the house is estimated to still be intact (Table 4). The depression may have been partially filled in 1928(?); in 1976 it was completely filled and the surface was rotovated, thereby removing all surficial evidence of this house. Also in 1976, all but the southern portion of the house was destroyed during the preparation of the mobile home foundation and in the construction of the roadway.

Comments: Many of the artifacts in the Dennis Chmielewski collection came from fill from c.d. 25, but it is not possible to assign a specimen to this house with absolute certainty.

CULTURAL DEPRESSION 26

This is a medium-sized cultural depression located on the knoll just east of c.d. 27. Since the 1976 rotovation of the knoll it is no longer visible but it is recorded on the BCH map. It was 7.6 m in "diameter", 45 cm in depth, and had no rim. C.d. 26 was a member of sampling stratum #9 but was not included in the original sample. It was,

however, briefly investigated as a result of an error in the field regarding the sampling design.

Location and Extent of Excavation: The location of this buried depression was calculated from the BCH map. A single 2 x 1 m unit, oriented east-west, was placed so that it would bisect the western edge of the depression . The unit was dug to a depth of up to 90 cm below surface. In addition, 4 auger holes were drilled in a row to the east of the unit (at distance of 2.7, 4.7, 6.7, and 8.7 m from the unit) to locate the eastern edge of c.d. 26. The 3 most easterly holes encountered deposits outside the cultural depression and will be discussed later in this appendix. The most westerly hole was drilled to a depth of 72 cm below surface. Area excavated = 2.04 m^2; volume excavated = 1.43 m^3.

Stratigraphy: The western edge of a buried house pit was exposed in the excavation unit whereas the auger holes were able to delineate the approximate eastern margin of the depression. Four major stratigraphic units were evident both in the unit and in the auger hole (Fig. 16):

Layer 1: surface and underlying stratum of very firm (A4), dark yellowish brown (10 YR 3/2), silty clay loam with numerous lenses of pale yellowish orange (10 YR 8/6) silt and the occasional pocket of sub-angular pebbles. This layer had been rotovated in 1976.

Layer 2: poorly-defined, dark yellowish brown (10 YR 3/2), silty clay loam with a few fire-altered rocks and the occasional piece of charcoal. The top of this layer is considerably harder (A4) than the lower part (A1-2), probably due to increased evaporation in the upper zone. This layer consists of house pit fill but it was not possible to differentiate between roof and floor deposits.

Layer 3: house pit (feature #1) cut line.

Layer 4: non-cultural sediments.

Assemblage: A small assemblage of cultural materials was recovered (Tables 11-19). Of note are a narrow-spurred chert graver (Fig. 21b) and a chalcedony scraper similar to one recovered in c.d. 25 (Fig. 22c). Only 58% of the lithic detritus is basalt. Faunal remains were limited to 8 fish vertebrae and 2 fish gill plates along with a few small pieces of shell.

Features: n = 1.

#1. House Pit: Excavations revealed a buried house pit in the approximate location indicated on the BCH map. The pit was outlined by the layer 3 cut line which was moderately well defined. The house floor was more or less level and the almost vertical pit side (house wall) measured approximately 55 cm in height. A storage bench or shelf was located around the pit. The auger holes indicated that the dwelling must have been between 4.5 and 6.2 m east-west but

a more accurate measurement was not possible. The feature is interpreted as a house pit because of its size, characteristic profile, and associated cultural material.

Age and Cultural Affiliation: No radiocarbon dates are available for this house pit. The small assemblage does not contain diagnostic artifact types but the possible scraper cross-dating with c.d. 25 suggests a tentative Thompson phase age and affiliation for c.d. 26. This possibility is further supported by the high incidence of cryptocrystalline detritus, the small size and shallowness of the cultural depression, the absence of an encircling rim, c.d. 26's distance from the river, and by its proximity to other Thompson phase dwellings such as c.d. 25. The narrow-spurred (sharp) graver from c.d. 26 may be diagnostic of the Kamloops phase but, as discussed in appendix III, these tools are probably also found in the Thompson phase.

Condition: An estimated 75% of c.d. 26 is still intact. The cultural depression was first disturbed in 1928(?) but the scale of that disturbance is not known. The depression was probably partially filled at that time but the damage could not have been too extensive as the storage bench is still intact. In 1976, the depression was completely filled during the rotovation of the knoll but this did not add considerably to the disturbance of the deposits. Rodent disturbance is present but is minimal.

CULTURAL DEPRESSION 27

This is another medium-sized, buried, cultural depression located on the knoll (Fig. 5). It is recorded on the BCH map as being 7.1 m in "diameter" and 30 cm deep, and as having no rim. C.d. 27 was included in sampling stratum #9 and, like c.d. 26, was included in the sample by mistake.

Location and Extent of Excavation: Excavations consisted of one 1 x 2 m unit and 4 auger holes. The east-west oriented unit was dug to a depth of 60 cm below surface in a location which, according to the BCH map, was parallel to the east-west mid-line of c.d. 27 just inside the western rim. The auger holes became necessary when the excavation unit failed to encounter a sub-surficial depression. The holes were drilled in an east-west line 50 cm south of the unit at distances of 1, 4, 6 , and 7.5 m east of the unit, and to a depth of 82, 79, 66, and 35 cm below surface respectively. The first 3 holes encountered a buried cultural depression, presumably c.d. 27. The most easterly hole missed the depression and will be discussed later in this appendix. Area excavated = 2.11 m^2; volume excavated = 1.19 m^3.

Stratigraphy: Three major stratigraphic units appeared in the excavation unit and 2 additional layers were recognized in the auger holes.

Layer 1: ground surface and underlying layer of very hard (B4), dark yellowish brown (10 YR 4/2), silty clay loam, with some humus, the occasional rounded pebble, and irregularly-shaped lenses of hard (B3-4), silty loam, yellowish gray (5 Y 7/2) and dusky yellowish (5 Y 6/4) in color. This layer is located outside the buried depression and obviously had been disturbed. It is also present directly below surface in the auger holes.

Layer 2: hard (B3), dark yellowish brown (10 YR 4/2), silty clay loam, with occasional dusky yellow (5 Y 6/4) lenses, charcoal particles, and pieces of fire-altered rock. This layer appears to have been disturbed but less than layer 1. It is found only outside the cultural depression.

Layer 3: hard (B3), grayish brown (5 YR 3/2), silty clay loam. This layer consists of possibly undisturbed cultural fill inside the cultural depression underneath and directly on top of the layer 4 cut line.

Layer 4: house pit? (feature #1) cut line.

Layer 5: non-cultural sediments which underlie the cultural depression.

The boundary between layers 2 and 5 is poorly defined and the two layers grade into one another. Outside the cultural depression the top few centimeters of layer 5 may contain the occasional piece of charcoal and, possibly, a few

unmodified flakes, indicating that the top of this layer may also be somewhat disturbed.

Assemblage: A very small assemblage was obtained from c.d. 27 and from the unit located just outside the depression (Tables 11-19). Five artifacts including a diagnostic wide-spurred chert graver (Fig. 21a) came from the unit whereas a retouched flake was the only artifact found in the auger holes, i.e., inside the depression. Of the 145 pieces of lithic detritus which was recovered, 107 came from outside the cultural depression. All fire-altered rock came from outside the depression. A piece of unidentifiable shell came from one of the auger holes.

Features: n = 1.

#1. House Pit: the layer 5 cut line marks the edges of a buried pit in the general vicinity of c.d. 27 as shown on the BCH map. Little can be said about this feature as it was tested by only 3 auger holes. These holes indicate, however, that the pit measured more than 3.5 m from east to west and must have been at least 78 cm deep. The pit's bottom is somewhat concave and the side exhibits a pronounced inward taper. Presumably, the buried pit is c.d. 27. If so, its center is about 5 m east of the point marked on the map. It was not possible to confirm the dimensions attributed to c.d. 27 on the BCH map. The depression probably is a house pit because of its size.

Age and Cultural Affiliation: No age estimates are available for this buried depression as no dateable materials or diagnostic artifacts were recovered in the 3 auger holes. A tentative Thompson phase affiliation is suggested, however, by the size of the depression, its distance from the river, its proximity to other Thompson phase houses such as c.d. 25, and by the absence of a rim. The frequency of cryptocrystalline detritus and the presence of a diagnostic wide-spurred graver outside the depression are also characteristic of the Thompson phase but these deposits are not necessarily contemporaneous with the house pit.

Condition: C.d. 27 probably had a history of disturbance similar to that of c.d. 26. In 1928(?) the surficial depression may have been partially filled; in 1976 the entire depression was filled during the rotovation of the knoll. The ground was disturbed to a depth of up to 16 cm, mixing surface debris with buried archaeological material. Little horizontal displacement occurred, however. Layer 1 and, possibly, layer 2 can be attributed to these events. Gopher activity seems to have been minimal, at least outside the depression. An estimated 75% of c.d. 27 is still intact (Table 4).

CULTURAL DEPRESSION 28

C.d. 28 is another medium-sized, buried cultural depression located on the knoll (Fig. 5). According to the

BCH map, the depression had no rim and measured 8.5 m in "diameter" and 60 cm in depth. It is a member of sampling stratum #9 but was not included in the sample. When it became apparent, however, that auger testing could quickly determine the depth of cultural deposits in this part of the site, an auger was employed to verify the existence of a buried cultural depression in the area attributed to c.d. 28 on the BCH map.

Location and Extent of Excavation: Excavation consisted of a single auger hole drilled to a depth of 85 cm below surface just east of the driveway near the supposed center of the buried cultural depression. Area excavated = 0.04 m^2; volume excavated = 0.03 m^3.

Stratigraphy: Three major stratigraphic layers were visible in the auger hole:

Layer 1: surface and layer of hard (B3), moderate yellowish brown (10 YR 5/4), silty clay loam, 0-25 cm below surface. This layer appears to have been disturbed, probably due to the 1976 rotovation of the knoll.

Layer 2: heterogeneous, slightly hard (B2), dark yellowish brown (10 YR 4/2) to grayish brown (5 YR 3/2) silty clay loam to silty loam, 25-82 cm below surface. Layer 2 may consist of more than one layer.

Layer 3: non-cultural sediments, 82-85 cm below surface.

Assemblage: Only a few artifacts and pieces of lithic detritus were recovered from the auger hole (Tables 11-19). Three modern artifacts came from either layer 1 or the top of layer 2, and 2 spent chalcedony flake cores came from layer 2. Half of the 22 detritus pieces are cryptocrystallines.

Features: n = 0.

The auger probe showed that at least 82 cm of cultural deposits exist in the area where, according to the BCH map, c.d. 28 is located. These deposits are similar in color, texture, and depth to strata found elsewhere on the knoll within large buried depressions, suggesting that some kind of sub-surficial pit exists in this area. The layer 2/3 interface is probably a pit cut line and layer 2 will probably turn out to be the fill from c.d. 28 or some other buried cultural depression. If so, the pit would be at least 82 cm deep. It was not possible, of course, to confirm the pit's exact location nor its horizontal dimensions.

Age and Cultural Affiliation: No age estimates are available for this possible cultural depression. However, a Thompson phase affiliation is suggested by the high frequency of cryptocrystallines, the absence of a rim, its location away from the river, and its proximity to Thompson phase dwellings. The depression is somewhat large, however, for a

Thompson phase structure.

Condition: Except for the observation that the roadway did not cut through the buried depression, it is not possible to assess the pit's condition. Assuming that c.d. 28 had a history of disturbance similar to that for c.d.s 26 and 27, an estimated 75% of the depression is still intact.

CULTURAL DEPRESSION 39

This large, rectangular cultural depression with rounded corners is located next to the river bank at the eastern end of the site. The surficial depression measures 11.50 m north-south by 12.45 m east-west and has a maximum depth of 1.07 m. The rim is 61 cm in height. C.d. 39 is largely undisturbed and was selected for investigation from sampling stratum #14 because the other cultural depression in this stratum had been extensively damaged.

Location and Extent of Excavation: A north-south trench sectioned c.d. 39 from its center to just outside its northern rim. The 8 m-long trench consisted of six 1 x 1 m units, one 1 x 0.5 m unit, and one 1 x 1 m baulk, and it sectioned the northern rim, wall, and floor area, as well as the central floor area. The "wall units" reached depths of up to 82 cm below surface whereas the "floor units" encountered non-cultural deposits between 40 and 50 cm below surface.

In addition, a 2 x 1 m unit was dug along the eastern rim of c.d. 39 immediately north of the depression's southeast corner. This excavation was undertaken because several of our informants recalled seeing a tunnel-like depression in this area between c.d.s 39 and 40. The unit was dug to a depth of 100 cm but only a refuse dump was encountered.

Total area excavated = 8.50 m^2; volume excavated = 5.61 m^3.

Stratigraphy: The trench revealed a typical house pit profile with 2 stratigraphically distinct occupation floors. The stratigraphy was well defined in the central portion of the depression but some of the layers were difficult to delineate along the rim and house wall. Ten major stratigraphic units could be defined in the trench (Fig. 17):

Layer 1: surface, turf, and layer of highly organic, slightly hard (B2), moderate olive gray (5 Y 4/2), silty clay loam.

Layer 2: slightly hard (B2), light olive gray (5 Y 5/2), silty loam with occasional charcoal flecks. This layer consists of fill directly on the uppermost occupation floor (Floor B). Floor B is marked by the layer 2/4 interface.

Layer 3: slightly hard (B2), moderate olive gray (5

Y 4/2), silty clay loam with numerous pieces of charcoal, pockets of pale yellowish brown (10 YR 6/2) ash, lenses of burnt sediments, and scattered fire-altered rocks. This layer constitutes feature #2, a hearth or rock scatter, and also lies directly on Floor B.

Layer 4: mottled layer of predominantly light olive gray (5 Y 5/2), firm (A3), silty clay. This deposit separates the two floors.

Layer 5: similar to layer 4 but highly organic, with scattered pieces of charcoal, and some black stains. This layer lies directly on the house pit cut line (layer 7) and is floor debris from the initial occupation of the house (Floor A).

Layer 6: this layer consists of several pockets of wood(?) ash, charcoal, and burnt sediments within layer 5. The ash lenses are predominantly yellowish gray (5 Y 8/1) in color and are the remains of an ash hearth (feature #4) associated with Floor A.

Layer 7: house pit (feature #1) cut line.

Layer 8: possible post hole (feature #3) cut line.

Layer 9: non-cultural sediments.

Layer 10: poorly-defined layer of fill similar in color, texture, and cohesion to the non-cultural sediments (layer 9) but containing the occasional piece of charcoal, artifact, or other cultural item. Layer 10 is mottled in

places, indicating that the fill has been redeposited. The layer 9/10 interface was difficult to delineate as was the layer 2/10 interface next to the river bank. Layer 10 appears to be floodplain sediments removed during the excavation of the house pit and piled on the adjacent ground surface, i.e., the top of layer 9. These deposits formed a slightly elevated bench or storage shelf.

The stratigraphic sequence revealed by the 2 x 1 unit located along the eastern rim of c.d. 39, which is also known as the 'exterior unit', was very different from that exposed in the trench. This unit appears to have missed the house wall and bench; instead, it sectioned a refuse deposit located just outside the dwelling. Two major stratigraphic zones were observed, each with numerous laminae and lenses. The microstratigraphy for each zone is very complex and was difficult to delineate and describe. The 2 major layers are as follows:

Layer 11: a thick, heterogeneous stratum which underlies the present-day turf zone and is dominated by charcoal, ash, burnt sediments, and fire-altered rocks. This debris occurs in lenses, pockets, and laminae throughout layer 11. The layer averages 55 cm in thickness and is a potpourri of different textures, colors, and cohesions because of the numerous inclusions. Layer 11 yielded nearly 22 kg of fire-altered rock. Artifacts, charred bone

fragments, and unburnt bones were also frequent, but chipping detritus was not. Small pieces of unburnt birch bark were found throughout this layer.

Layer 12: a thick layer of soft (B1), dark yellowish brown (10 YR 4/2), silty sand with the occasional piece of charcoal, a few dark organic stains, and several lenses of decomposed bone. Much of the charcoal occurs near the top of this layer and thermally-cracked rocks are scarce. This layer averages 45 cm in thickness but contains little cultural material compared to layer 11. Non-cultural layer 9 underlies layer 12.

Assemblage: C.d. 39 produced the largest assemblage (Tables 11-19). Almost 100 artifacts were recovered, including many items made of bone, antler, tooth, and mineral. About 25% of the artifacts came from the exterior unit. The Euro-american items came from layer 1 and from the disturbed areas within the depression. Six diagnostic Kamloops style side-notched points were recovered, primarily from the house floors close to the north wall. All but one are snapped across the neck; the relatively intact specimen is associated with Floor B and is illustrated (Fig. 20a). Several biface ends which were recovered may be the tips of small points. A pentagonal biface diagnostic of the Kamloops phase came from the exterior unit as did a backed knife and a distinctive basalt biface (Fig. 21f). Also recovered from

the house was a beaver incisor gambling die (Fig. 23b), a chipped argillite saw (Fig. 21i), 2 pieces of red ochre, and an asymmetric stemmed point (Fig. 20ℓ). Associated with the rock scatter or hearth (feature #2) and Floor B were 2 antler tine flakers and several basalt pressure flakes, suggesting that the prehistoric knapper may have sat next to the fire while pressure flaking.

Only 15% of the recovered lithic detritus came from the exterior unit but almost 85% of the fire-altered rock originated there. About 75% of the identifiable faunal remains came from within the house and two-thirds of that was recovered from the 2 floors. Fish vertebrae are common as are deer remains. Both white-tail and mule deer are represented; the other species found within the depression are represented by a few remains only (Table 17). Of note is the presence of both Anodonta and Margaritifera mussel shells, albeit in small numbers. The exterior unit yielded only a single fish vertebra but deer remains were numerous. This unit also produced the remains of beaver, Canada goose, gopher, and hare.

Features: n = 5.

#1. House Pit: this large house pit is outlined by the layer 7 cut line and manifests itself surficially as c.d. 39. Measurements for the surficial depression were given above but the exact size of the pit itself is not

known. The north-south dimension of the house pit is, however, probably close to 9.5 m based on the relationship between the house wall and the northern rim in the excavated trench (Fig. 17), although the house would be somewhat larger if the surrounding bench is included. The pit is approximately 75 cm deep and has a level floor with vertical sides and a rounded floor/wall juncture. Presumably, the pit is rectangular in plan with rounded corners, similar to the surficial depression. The pit's size, shape, and associated material clearly indicate its function as a dwelling.

#2. Rock Hearth, Oven, or Scatter: this feature corresponds to layer 3 and consists of numerous pieces of charcoal, pockets of wood(?) ash, lenses of burnt sediments, charcoal stains, and 24 scattered fire-altered rocks. The feature was only partially exposed, measuring 91 cm north-south by 93 cm east-west and 21 cm thick (maximum). The 24 rocks ranged in size from 4 x 5 x 3 cm to 13 x 12 x 7 cm. Associated with this feature are several calcined land mammal bones along with 2 antler tine flakers and a few basalt pressure flakes. This feature may be interpreted either as a hearth with widely spaced rocks or as a rock, ash, and charcoal scatter from a hearth located just west of the trench. This hearth or scatter lies directly on Floor B and has been disturbed near its center by a possible post hole (feature #3).

#3. Post Hole(?): this poorly defined feature was first noticed in the trench face upon completion of excavation. It resembles a post hole in both size and cross-section but this interpretation is tentative. The "post hole" cuts through the rock scatter or hearth (feature #2 and layer 3) as defined by the layer 8 cut line (Fig. 17). It is not clear, however, where on the stratigraphic section the possible post hole originates. It may start at the top of layer 3 or it may begin somewhat higher in the mottled deposits of layer 2. Lastly, the feature may simply be an extension of the overlying disturbed area (Fig. 17), but the cut line does not appear to continue through layer 2. This suggests that the feature is associated with the native occupation of the house and that it is either contemporaneous with, or somewhat younger than, Floor B and the rock scatter or hearth (feature #2).

The "post hole" appears to be circular or oval in plan and has a "diameter" of 15 cm at its tops and 9 cm near its bottom. It is 13 cm deep. The northern edge of the hole exhibits a more acute slope than the southern edge, possibly because the post (or ladder?) sloped towards the north. Several fire-cracked rocks and pieces of charcoal were found within the feature along with burnt and unburnt layer 2 sediments. Presumably, these inclusions came from feature #2 and could have ended up in the hole only if it

was left empty. If this is a post hole, then the post must have been removed.

#4. Ash Hearth: a concentration of wood(?) ash, burnt sediments, charcoal, and fire-altered rock was found in association with Floor A and was interpreted as the remains of a hearth. Only a few, small, thermally-cracked rocks were associated with this feature; the term 'ash hearth' is used to differentiate this type of hearth from the more common hearths which include numerous rocks.

Just the eastern edge of the hearth was exposed. It covered an irregularly-shaped area of about 78 cm north-south by 30 cm east-west. The ash, charcoal, and burnt sediments occurred in discontinuous pockets and lenses within a layer 5 matrix. The hearth deposits comprise layer 6 on the stratigraphic section drawing (Fig. 17). Although this hearth is located directly underneath the other hearth (feature #2), the 2 are separated stratigraphically by layer 4.

#5. Post(?): what may be the flat base of a small oval post was uncovered approximately 75 cm in from the house wall between 14 and 16.5 cm above Floor A. Floor B is not evident stratigraphically in this section of the trench, but the top of the post is approximately at the same elevation as Floor B is elsewhere, suggesting that Floor B may have extended to the house wall and that this feature was associated with that floor.

The charred post remains measured 12.5 by 8.5 cm and were only 2.5 cm high. The wood was identified as Douglas-fir. No associated post hole could be detected. The orientation of the wood grain and the sheared top suggests that this was the base of a longer, vertical piece of wood. In all likelihood this post base was preserved because it was charred.

Age and Cultural Affiliation: Two radiocarbon dates place the occupation of c.d. 39 within the time span of the Kamloops phase. A date of 1030±180 years B.P. (SFU-38) was obtained on charcoal from feature #4, the ash hearth associated with the earliest occupation of the house (Floor A). A second date of 190±130 years B.P. (SFU-36) came from layer 2 close to the house wall and post feature (#5) and about 18 cm above the bottom of the house pit. This sample may date Floor B if this floor extends to the house wall.

The rectangular shape, large size, and high rim of c.d. 39 as well as its proximity to the river are also indicative of a Kamloops phase affiliation. This is further supported by the presence of Kamloops style side-notched points. The Euro-american artifacts are of recent manufacture and do not imply an historic or proto-historic occupation of this house.

A single pentagonal biface diagnostic of the Kamloops phase is the only indicator of cultural affiliation for the

exterior unit. Presumably much or all of the debris outside the dwelling came from c.d. 39 or nearby c.d. 40, or resulted from activities carried out around the dwelling at the time of its occupation.

As discussed in chapter 6, c.d. 39 was probably occupied on at least 2 different occasions separated by an hiatus of 500 or more years. These 2 major occupations are represented by Floors A and B. It is possible, of course, that each of these floors contains the debris of several seasonal occupations, but these are not evident stratigraphically.

Condition: An estimated 95% of c.d. 39 remains intact (Table 4). Gopher tunneling and relic collecting has caused some disturbance of the deposits but this damage is minimal. Continued erosion of the river bank could lead to the eventual destruction of c.d. 39 but this is not an immediate danger.

Comments: Like c.d. 7, c.d. 39 may have been a winter mat lodge with a light pole and mat superstructure set over a rectangular pit. Any evidence for such a frame would, presumably, come from the house bench underneath the rim. None was uncovered but very little of the rim was excavated. The possible post which was exposed was located inside the pit and may not have been part of the superstructure. The possible post hole in the center of the house may

indicate the more common 4-post earth lodge structure, but this feature may be something other than a post hole. Further, the roof deposits in the depression are relatively thin, suggesting that the structure either did not have an earth-covered roof, or that the roof was dismantled and the posts removed when the house was abandoned.

No evidence for an underground tunnel was uncovered in the exterior unit. It is possible, of course, that this feature is present but was not encountered because the unit was only 2 m long. There is no surficial evidence, however, that it is located elsewhere although it should be noted that part of c.d. 40's western rim was recently disturbed.

The dump outside c.d. 39 contained primarily hearth and oven debris. This refuse could well have originated in one of the adjacent dwellings and was dumped there as part of residence maintenance. If this material originated from c.d. 39, then it seems likely that the dwelling was oriented east-west with an entrance at least at its eastern end. Similarly, if the debris came from c.d. 40, then that dwelling must have also been oriented east-west with an entrance at least at its western end.

CULTURAL DEPRESSION 41

C.d. 41 is a small depression located along the river at the eastern end of the site (Fig. 2). The rimless

surficial depression measures 5.10 m east-west by 4.80 m north-south and it is 61 cm deep. It was selected for investigation from sampling stratum #11 because of its condition.

Location and Extent of Excavation: A 4 x 1 m trench was excavated along the east-west mid-line of c.d. 41 from the center of the depression to 1.5 m beyond the depression's western edge. Two extensions were added to the trench: a 1 x 1 m unit was placed immediately north of the trench at its western end whereas a 1 x 0.5 m east-west oriented extension was added to the southern side of the trench at its opposite end. Excavations reached depths of 50 to 60 cm below surface. Area excavated = 5.50 m^2; volume excavated = 2.85 m^3.

Stratigraphy: The profile of a possible small house pit was exposed in the trench. Six major stratigraphic units could be recognized (Fig. 16):

Layer 1: surface and very organic zone of slightly hard (B2), grayish brown (5 YR 3/2), silty loam riddled with the roots of giant wild rye and other plants. Concentrations of charcoal, wood ash, and burnt sediments were encountered at the base of this layer in the northeast corner of the trench. The presence of modern debris throughout layer 1 indicates that this layer was deposited in historic times.

Layer 2: a relatively thick and mottled stratum of predominantly firm (A3), olive gray (5 Y 3/2), clay loam with scattered charcoal and the occasional piece of fire-altered rock. This layer is somewhat redder in color (moderate brown, 5 YR 3/4) at the western end of the trench. Layer 2 fills the small house (?) depression, but floor and roof deposits could not be differentiated. The redder layer 2 deposits at the western end of the trench may be located outside the depression but there was no clear stratigraphic demarcation between an "inside" and and "outside" area. The top of layer 2 formed the surface of c.d. 41 before layer 1 was added in the historic period. A slightly darker and more humic zone evident at the top of layer 2 probably is the former ground surface and turf.

Layer 3: house(?) pit (feature #1) cut line.

Layer 4: cut line of the small pit associated with the rock cluster (feature #2).

Layer 5: possible post hole (feature #4) cut line.

Layer 6: non-cultural sediments.

Assemblage: A large collection of Euro-american items came from layer 1, primarily in association with feature #5. Almost 38% of all Euro-american artifacts collected at EdQx 15 came from c.d. 41 (Table 12). Only 11 indigenous artifacts were recovered (Table 13), including a chalcedony, crescent-shaped, continuous scraper (Fig. 22b).

Lithic detritus consists primarily of small flakes with striking platforms and all but 2 pieces were basalt. Dog, hare, deer, gopher, vole, mouse, fish, and cow were represented in the faunal remains (Tables 15-17); the single cow phalange came from layer 1. Failure to weigh the rocks of features #2 and 3 in the field resulted in an incomplete quantification of fire-altered rock for c.d. 41; at least 2.26 kg of fire altered rock was recovered from throughout the depression.

Features: n = 5.

#1. House(?) Pit: this pit feature is defined by the layer 3 cut line and shows surficially as c.d. 41. The pit has a saucer-shaped profile consisting of a concave floor and a sloping wall (Fig. 16). A relatively level bench encircles the top of the wall. The pit, exclusive of the bench, is slightly larger than the surficial depression, measuring approximately 5.3 m east-west (assuming bilateral symmetry). The pit is at least another 2 m larger if the bench is included, but the exact width of the bench cannot be determined at this time.

Two rock features (#2 and #3) are associated with the pit. Feature #3 is located a few centimeters above feature #2 and the bottom of the pit floor, indicating that at least 2 occupation floors must be present, one along the layer 3 cut line and another at the elevation of feature #3. The

upper floor is not evident, however, stratigraphically.

The pit is somewhat small for a house pit by EdQx 15 standards. Nevertheless, this feature is tentatively identified as a residence because of its distinctive profile, shape, depth of deposits, and associated cultural material. If the rock cluster in the floor (feature #2) was used for sweat bathing (see below), c.d. 41 may have been a sweat lodge. Ethnographic sweat huts are, however, considerably smaller and are not built in or over an excavated pit except for the small pit which holds the hot stones.

#2. Rock Cluster (in a pit): this feature is located in the southeast corner of the trench in the house(?) pit floor near the center of the depression (Fig. 16). It consists of an ill-defined, small, and shallow pit outlined by the layer 4 cut line and completely filled with heated and occasionally fire-cracked rocks. The oval, bowl-shaped pit measures 39 by 32.5 cm and has a maximum depth of 22 cm. It contained 20 cobble-sized rocks and a few flecks of charcoal. Ash and burnt sediments were absent.

This feature may have been a hearth because of its size and location and the presence of thermally-cracked rock and charcoal. The small amount of charcoal and the absence of ash and burnt sediments may indicate, however, that no fire ever burned in this pit. If so, the rocks must have been placed in the pit after they had been heated or used

elsewhere. Possibly these rocks were used as a source of direct heat for sweat bathing, in which case c.d. 41 may have been a large sweat lodge.

#3. Rock Hearth, Oven, or Scatter: this feature is also located near the center of the house(?) pit a few centimeters above feature #2. The scatter consists of 30 fire-cracked rocks covering an irregularly-shaped area of approximately 70 cm east-west by 55 cm north-south. Four outlier rocks located to the north of the main concentration enlarged the scatter to 75 cm east-west by 105 cm north-south. The angular rocks range in size from 2.5 x 1.0 x 1.0 cm to 20.5 x 16.0 x 11.5 cm and form a discontinuous "pavement" with numerous rock-free spaces. Although a few pieces of charcoal were found amongst the rocks, the absence of ash, burnt earth, and more charcoal suggests that this feature is probably a scatter from a nearby hearth or oven. Burnt sediments along the east face of the trench at the same depth as the scatter may be the edge of such an hearth or oven.

#4. Post Hole(?): a poorly-defined stratigraphic anomalie on the north face of the 1 x 1 m extension may be the cut line for a post hole or other type of hole. This possible cut line was designated layer 5. Layer 5 begins 9 cm below surface in layer 1 and cuts through the top of layer 2. The feature is 31 cm wide at the top and 20 cm at the bottom and it can be traced to a depth of 16 cm below

surface. The hole may extend further down but this could not be determined. If this is a cut feature, the hole must have been dug after the abandonment of c.d. 41 because the hole originates in layer 1.

#5. Ash Hearth: a concentration of wood ash, charcoal, burnt sediments, and modern debris was located directly on the layer 1/2 interface in the northeast corner of the trench near the center of the surficial depression. Most of the Euro-american artifacts attributed to c.d. 41 (Table 12) came from this area. Only part of this feature was uncovered; it measured 70 cm north-south by 120 cm east-west and was up to 11 cm thick.

This feature is obviously the remains of a large fire which took place in the depression in recent times before the formation of layer 1. The presence of railway spikes amongst the debris suggests that the fire was fueled by trash from the C.P.R..

Age and Cultural Affiliation: No radiocarbon assays are available for c.d. 41. The small indigenous artifact assemblage does not contain any diagnostic objects although the chalcedony scraper (Fig. 22b), which may have been used as a graver (see Appendix III), could possibly be a variant of the concave-sided, wide-spurred, cryptocrystalline gravers found in the Thompson phase. This, however, is tenuous at best. The low incidence of cryptocrystalline detritus

is, of course, characteristic of archaeological units which post-date the Thompson phase. The Euro-american items are associated with layer 1 and do not date the depression.

C.d. 41's proximity to the river and to c.d. 39, a Kamloops phase dwelling, implies a Kamloops phase affiliation for c.d. 41. The size and depth of the depression and the absence of a rim are typical of Thompson phase house pits but c.d. 41 may not be a house. Small, shallow, and rimless storage pits are known from both the Kamloops and the Thompson phases but no sweat lodges have yet been excavated in the South Thompson area. A tentative Kamloops phase affiliation is proposed for c.d. 41, but its tentativeness should be stressed.

Condition: An estimated 95% of c.d. 41 is still intact (Table 4). Except for some gopher activity, the subsurficial deposits have not been disturbed.

CULTURAL DEPRESSION 42

C.d. 42 is a small, buried cultural depression exposed in the cut bank along the driveway just east of c.d. 25 (Fig. 5). It was not marked on the BCH map and there are no dimensions available for this pit. C.d. 42 was selected for excavation because it appeared to be the most intact of the 2 small cultural depressions known from this part of the site (sampling stratum #8).

Location and Extent of Excavation: Before excavations could begin, the slumpage along the bank was removed and the bank was roughly faced, revealing a distinctive pit profile. A 2 m long segment of the bank which contained the pit was then dug back about 40 cm to the 32.4 N grid line, thereby creating a 3-sided excavation unit which measured 2.0 m by ca. 40 cm. The latter dimension varied ± 10 cm because the cut bank was not oriented exactly parallel to the site grid. Excavations proceeded to a depth of 68 cm below surface. Area excavated = 0.80 m^2; volume excavated = 0.48 m^3.

Stratigraphy: Four well-defined strata formed a filled pit in the stratigraphic section (Fig. 15):

Layer 1: surface and underlying thin stratum of recently disturbed, moderately loose (B2), dark yellowish brown (10 YR 4/2), sandy loam with a high humus content, scattered sub-angular pebbles, and scattered patches of fine sand. This layer consists of reworked layer 2 sediments and forms part of the pit fill.

Layer 2: mottled, moderately loose (B2), dark yellowish brown (10 YR 4/2), silty clay loam with occasional charcoal flecks, gypsum particles, scattered pieces of fire-altered rock, iron oxide stains, and a few lenses of moderate yellowish brown (10 YR 6/4), hard (B4), clay loam. This layer constitutes the bulk of the pit fill.

Layer 3: refuse and/or storage pit (feature #1) cut line.

Layer 4: non-cultural sediments.

Assemblage: The pit yielded an unfinished projectile point (Fig. 20i) and a single utilized flake. Most of the lithic detritus came from the pit although 14 pieces originated in the slumpage at the base of the cut bank. Except for a few bone chips, all of the recovered faunal remains came from the pit. The pit also yielded just over 1.5 kg of fire-altered rock. Tables 11-19 quantify the recovered material.

Features: n = 1.

#1. Refuse and/or Storage Pit: the layer 2 cut line outlined a well-defined buried pit. The bottom is somewhat concave and the sides appear to have been vertical although the form of the sides remains uncertain because the top of the pit has been disturbed. The curvature of the sides indicate that the pit was originally circular or slightly oval in plan and that just slightly more than 50% of the pit was destroyed when the driveway was cut through the edge of the knoll. The extant portion of the pit has a diameter of 1.91 m which probably is somewhat less than the full diameter of the original pit. The present pit has a maximum depth of 68 cm and this too may be somewhat less than the original depth because recent land alterations have made it impossible to

determine the exact elevation of the original ground surface.

The inclusion of some debris in the pit fill may indicate its use as a trash pit, but this material could just as easily have slid into the pit. Presumably the pit served some other function before it was filled with the present sediments, but there is no stratigraphic or artifactual evidence for such an earlier usage. The lack of fire-altered rock indicates that the pit probably originally served as a storage pit and that its contents were completely removed before it was again filled. Layer 1 and 2 may represent this infilling, but there could have been several fill-and-remove episodes before the final deposition of layers 1 and 2.

Age and Cultural Affiliation: No radiocarbon dates are available for this pit. The projectile point is unfinished and cannot be cross-dated nor is it diagnostic of any archaeological unit. Because of the pit's proximity to c.d. 25 and its location on the knoll, it is tentatively assigned to the same archaeological unit as the other cultural depressions in this area, i.e., the Thompson phase.

Condition: An estimated 30% of c.d. 42 is still intact (Table 4). The disturbance of this pit seem to be attributable to 2 and, possibly, 3 separate events. Excavation of the driveway in 1976 removed at least the northern

half of the pit, exposing what remained in profile in the cut bank. Later that year the entire knoll was rotovated, resulting in the formation of layer 1. The absence of c.d. 42 on the BCH map indicates that the surficial depression had in all likelihood been filled prior to the land alterations of 1976, probably during the 1928(?) levelling of the knoll. Except for the top 9 to 16 cm below surface (layer 1), all of the surviving deposits of c.d. 42 remain undisturbed.

Comments: Because the eastern edge of c.d. 25 is poorly visible in the road cut, the stratigraphic relationship between c.d.s 42 and 25 is not clear. If c.d. 42 served as an exterior storage pit for the inhabitants of c.d. 25, then it would refute Wilson's (1976:179) comments that exterior storage pits first appeared in the Kamloops phase. Carlson (1978:42) may also have uncovered a Thompson phase exterior storage pit at the Curr site just west of Monte Creek.

CULTURAL DEPRESSION 45

This buried house pit is located on the central knoll just west of the roadway (Fig. 5). It is not visible surficially, having been filled during the 1928(?) levelling of the knoll. This circular or oval depression does not appear on the BCH map and its dimensions are not known. C.d. 45

was not included in the original excavation sample as its presence was not known. It was, however, accidentally encountered during the search for c.d. 24 which, according to the BCH map, was located in approximately the same area.

Location and Extent of Excavation: A single 2 x 1 m unit, dug to a depth of 105 cm below surface, tested c.d. 45. The unit was located directly over the southwestern wall/floor juncture of the house pit. Area excavated = 2.00 m^2; volume excavated = 2.10 m^3.

Stratigraphy: Excavations revealed a partial house pit profile underneath approximately 50 cm of disturbed fill. Five major layers were present (Fig. 19):

Layer 1: surface and well-defined underlying stratum of recently disturbed, moderate yellowish brown (10 YR 5/1), soft to slightly hard (B1-2), silty sand with the occasional angular and sub-angular pebble. This layer is the 1976 rotovation zone.

Layer 2: grayish yellowish brown (10 YR 3/2), soft (B1), silty loam with several pockets of gravel, one of which extended into layer 3. The layer 1/2 interface is well defined but the layer 2/3 interface is not. Layer 3 is a disturbed stratum and may be fill placed over the house pit in 1928(?).

Layer 3: similar to layer 2, but with inclusions of moderate yellowish brown (10 YR 5/2), slightly hard (B2),

silty sand. This is original house pit fill and is not disturbed except, possibly, for the top few centimeters. Floor and roof deposits could not be differentiated.

Layer 4: house pit (feature #1) cut line.

Layer 5: non-cultural sediments.

Assemblage: C.d. 45 yielded a moderately-sized assemblage of cultural materials (Table 11-19). Layers 1 and 2, which have been extensively disturbed and may be redeposited fill, contained Euro-american artifacts, chicken bones, 20 indigenous artifacts, and some fish, bird, land mammal, and freshwater mussel remains. The historic debris is undoubtedly intrusive and the native material may also not belong to c.d. 45 if this fill came from outside the house. Included among these artifacts were 2 projectile points (Fig. 20 n,o), 2 sharp-tipped gravers, and a chalcedony drill bit. Of note from the lower deposits (layer 3) was a basalt drill bit, a bone awl (Fig. 22g), 2 distinct scrapers (Fig. 22a,d), some red ochre, and a biface/scraper similar to the surface find illustrated in Fig. 21e.

Faunal remains consist primarily of fish (presumably salmon) vertebrae (Tables 15-17). Antler was not recovered and shell was limited to one piece of Anodonta and 5 unidentifiable fragments from the disturbed upper deposits. Much of the faunal material came from layer 3 and was especially

plentiful in the vicinity of the house floor. More than half of the fire-altered rock came from layers 1 and 2 (Table 19). Almost 18% of the lithic detritus from the house fill (layer 3) consists of cryptocrystallines, a somewhat greater percentage than for the entire unit (Table 14).

Features: n = 1.

#1. House Pit: the edge of a large circular or oval pit was uncovered approximately 50 cm below surface (Fig. 18). It was delineated by the layer 4 cut line. The pit is probably the remains of a dwelling because of its size, distinctive profile, and associated cultural material. A short segment of the southeastern edge of the house was exposed, and revealed part of the encircling bench or shelf, a sloping pit wall, and an almost level floor (Fig. 19). The pit's horizontal dimensions are not known, but it probably was a medium-sized house based on the curvature of the wall. The pit was at least 40 cm deep.

Age and Cultural Affiliation: No absolute age estimates are available for c.d. 45. This house is tentatively assigned to the Thompson phase because of its distance from the river, its proximity to other Thompson phase house pits, the incidence of cryptocrystallines, and the presence of large corner-notched points and chipped stone drills. Both of the points and one of the drills, however,

came from the disturbed upper deposits and may not be associated with c.d. 45.

Three artifacts from the lower house fill are morphologically distinct and may be diagnostic of the Thompson phase. They are a triangular chalcedony scraper with very steep and high unifacial retouch along one margin (Fig. 22d), an irregularly-shaped chalcedony scraper with several projections (Fig. 22a), and a basalt biface/scraper consisting of a rectangular biface with an unifacially retouched concave distal end.

The 2 sharp-tipped gravers from the upper strata may be characteristic of the Kamloops phase but, as discussed in appendix III, these implements are probably also found in the Thompson phase.

Condition: An estimated 50% of c.d. 45 is still intact (Table 4) underneath the disturbed upper layers. This percentage could be considerable higher. The house pit was initially filled during the 1928(?) land alterations, probably in conjunction with the construction of the C.P.R. storage shed. It is not clear how much of the house was disturbed at this time but at least part of the house floor and wall escaped damage. The depression has not been visible surficially since that date. The area was subsequently rotovated in 1976 (layer 1). Gopher tunneling is extensive throughout the deposits.

CULTURAL DEPRESSION 46

This is a small, oval depression located along the river bank at the eastern end of the side just west of c.d. 39 (Fig. 2). Periodic floods have caused large parts of c.d. 46 to slump into the river, and only a partial depression measuring about 3.5 m east-west by 2.5 m north-south remains. The depression is 70 cm deep and has no rim.

Although a member of sampling stratum #11, c.d. 46 was not included in the sample because of its condition. It became necessary to undertake some work there, however, when 3 of our informants identified c.d. 46 as the possible mouth of a tunnel which they had seen in 1974 between the river bank and c.d. 39. Although there was no surficial evidence for a tunnel linking the 2 depressions, a brief examination of c.d. 46 was initiated to evaluate these statements.

Location and Extent of Excavation: A 3.5 m long section of the river bank was shovel-faced to expose c.d. 46 in profile. Slumpage and vegetation has obscured the depression and this material had to be removed before c.d. 46 could be examined. This section of the river bank was somewhat V-shaped in plan view, with the apex of the V pointing into the center of the depression. The bank was faced to a depth of 55 cm below surface.

Stratigraphy: No stratigraphic evidence for a tunnel was encountered in the faced bank. Instead, a well defined

oven or hearth feature was exposed. Four major stratigraphic units were evident:

Layer 1: surface and well developed layer of turf.

Layer 2: a highly humic, soft (B1), brownish black (5 YR 2/1), sandy loam with numerous charcoal and burnt sediment inclusions and crammed with fire-altered rock. This layer is plano-convex in cross-section and represents the fill of feature #1.

Layer 3: oven(?) (feature #1) cut line.

Layer 4: non-cultural sediments.

Assemblage: Except for the fire-altered rock and charcoal, no cultural material was encountered during the facing of the cut bank.

Features: n = 1.

#1. Rock Hearth, Oven, or Scatter: this feature consists of a shallow pit filled with thermally-cracked rocks, charcoal, burnt sediments, and some highly organic unburnt sediments. The pit is delineated by the layer 3 cut line and layer 2 constitutes pit fill. What was exposed of the pit measured 1.6 m east-west but the feature could be considerably larger, especially since the surficial depression is approximately 3.5 m east-west. The pit has a saucer-shaped profile with a top that follows the contour of the ground surface and is more or less level except for the slight surficial depression recorded as c.d. 46. The pit in

the cut bank has a maximum depth of 40 cm.

This feature is interpreted as an oven because of its size, shape, profile, and distinctive fill. Storage pits and refuse pits are usually deeper and have almost vertical sides, resulting in a bell-shaped rather than a saucer-shaped profile. Because the fire-altered rock occur within a pit, it is not likely that this feature simply is a fire dump. The feature could be a hearth as it is quite shallow. The density of the fire-altered rock, however, suggest that it functioned as an oven.

Age and Cultural Affiliation: It is not possible to offer an age estimate or an assessment of cultural affiliation for c.d. 46 other than to note that at EdQx 15 cultural depressions near the river appear to date to the Kamloops phase. Such an affiliation may be valid for c.d. 46.

Condition: An estimated 30% of c.d. 46 may still be intact (Table 4) based on the shape and size of the surficial depression. Undercutting of the river bank during highwater has removed a substantial portion of the depression and cattle have added to its disturbance by using it as access to the river.

CULTURAL DEPRESSION 53

This circular refuse pit is located in the western end of the site (Fig. 5) underneath c.d. 7 (Fig. 12). It

is, of course, not visible surficially and is not shown on the BCH map. C.d. 53 was encountered during the excavation of c.d. 7.

Location and Extent of Excavation: C.d. 53 was initially exposed in the northeast corner of the trench through c.d. 7 (Fig. 12). In order to uncover more of c.d. 53, a 1 x 0.5 m extension was added to the trench. The trench and the extension were dug to depths of 130 and 110 cm below surface respectively. Area excavated = 0.62 m^2; volume excavated = 0.71 m^3.

Stratigraphy: The lower portion of a refuse pit was outlined in the stratigraphic section. Four major strata and numerous small laminae were evident (Fig. 13):

Layer 1 (#8 on Fig. 13): dark yellowish brown (10 YR 4/2), loose (B0) to soft (B1), sandy silt with charcoal flecks and scattered fire-altered rock. This layer comprises the upper fill of c.d. 53. The interface between layer 1 and c.d. 7 is poorly defined.

Layer 2 (# 9 on Fig. 13): similar in color, texture, and cohesion to layer 1 but with numerous horizontally stratified humic stains and lenses of decomposed bone. Charcoal and fire-altered rock is also present. This layer constitutes the lower fill of c.d. 53 and is partially separated from layer 1 by a piece of birch bark.

Layer 3 (#10 on Fig. 13): refuse pit (feature #1)

cut line.

Layer 4 (#6 on Fig. 13): non-cultural sediments.

Assemblage: The assemblage from c.d. 53 is quantified in Tables 11-19. Only 2 artifacts, consisting of one retouched and one utilized flake, were recovered. A Kamloops style side-notched point (#7-32, Fig. 20d) came from the c.d. 7/c.d. 53 interface and may belong to c.d. 53 rather than c.d. 7. Lithic detritus was also scarce; only 8 pieces were found.

The pit did yield a large faunal assemblage, primarily from layer 2. Antler and shell was absent, but almost 1200 pieces of bone were recovered, including 156 elements which could be identified as to genus or species. The identifiable pieces consist primarily of fish vertebrae (45%), but dog (26%) and deer (23%) remains were also plentiful. Chinook salmon, sockeye(?) salmon, and unspecified fish were represented among the vertebrae. Six partial articulated fish vertebral columns were recovered including one section of 13 abdominal sockeye(?) vertebrae, one of 9 caudal chinook vertebrae, and other sections of 4, 6, 11, and 23 unspecified fish vertebrae.

Dog and deer were represented by the remains of both mature and juvenile individuals. Except for a few maxillary (with teeth) and rib fragments, all deer remains consist of upper autopodial elements from the front limb. Of note are

3 articulated carpi with attached proximal metacarpals and/or distal radii fragments.

Dog remains also consist primarily of autopodial elements, but both the front and hind limbs are well represented. Also recovered were dog teeth, mandibles, a scapula, and 3 coprolites. The coprolites were attributed to dogs because of their size. The remains of at least one mature and 2 immature dogs are present.

Also recovered was nearly 3 kg of fire-altered rock and 2 pieces of birch bark. One piece was very small; the other measured 10 x 26 cm and formed part of the layer 1/2 interface.

Features: n = 1.

#1. Refuse and/or Storage Pit: this is c.d. 53. It is located underneath the northern wall and bench (or shelf) of c.d. 7, and was partially destroyed during the construction of that house. The top of the pit may have been removed at that time along with the upper portion of the southern side. As a result of these changes, and because only the southwest quadrant of the pit was exposed, it is possible to only estimate the pit's original dimensions. The pit was between 70 and 110 cm deep and must have had a "diameter" of at least 2.3 m. The pit is circular or oval in plan and has a pronounced concave bottom with inward sloping sides.

The debris from layer 2 clearly shows that the bottom of this pit was filled with refuse. Included in the trash were dog paws, coprolites, and jaws; deer carpi and teeth; fish vertebral columns and individual vertebrae; bone chips; and thermally-cracked rocks and charcoal. Earth was added to the garbage, and the debris may have been covered by a sheet of bark and a layer of sandy silt (layer 1). Alternatively, layer 1 may represent fill added to the pit during the construction of c.d. 7. If so, the pit was probably only partially filled with trash as it is unlikely that the builders of c.d. 7 would have first removed the upper trash from the pit before adding the layer 1 fill.

The pit closely resembles c.d. 1, an exterior storage pit, in both size and shape. C.d. 53 may have been a storage pit originally. There is, however, no evidence to confirm this other than its proximity to other possible storage pits (c.d.s 1, 2, 4-6, and 47-49).

Age and Cultural Affiliation: A radiocarbon date of 530 80 years B.P. (SFU-34) was received on scattered charcoal from the bottom of the pit. This date suggests a late Kamloops phase affiliation for c.d. 53. Such an affiliation is supported by the Kamloops style point (Fig. 20d) which might have come from layer 1, and by the likelihood that c.d. 53 belongs to a cluster of small cultural depressions including c.d.s 1, 2, 4-6, and 47-49. Such clusters are

characteristic of the Kamloops phase.

Condition: If the destruction caused by the aboriginal excavation of c.d. 7 is not considered, approximately 95% of c.d. 53 is probably still intact (Table 4). Gopher tunneling is present but has caused minimal damage. If, however, the impact of c.d. 7 is considered, probably ony 70 to 80% of c.d. 53 is still intact. This figure may even be somewhat high.

Comments: The radiocarbon dates from c.d.s 7 and 53 indicate that c.d. 53 had been abandoned for at least 200 years before c.d. 7 was built. The radiocarbon date of 540 80 years ago for c.d. 1 is similar to that for c.d. 53 and supports the idea that both pits may have belonged to a contemporaneous cluster of small cultural depressions at the western end of the site.

The refuse in c.d. 53 appear to be primarily the remains of fish, dog, and deer butchering. These activities were probably carried out outside the dwellings and it would be difficult to attribute these remains to the residents of any particular house. The pit may have been specifically dug for the purpose of refuse disposal but more than likely an existing empty pit was used. If so, the original function of c.d. 53 is not known, but it may have served as a storage pit because of its size, its proximity to 7 similar pits (storage pits often come in groups), and the lack of

fire-altered rock and burnt sediments indicative of its use as an oven. Because of the absence of slumpage in the pit, the trash must have been added to the pit not long after it was dug or its contents had been removed.

SURFACE COLLECTION

Cultural material was obtained from the site's surface in 2 ways. Firstly, a systematic surface collection was conducted over an 1460 m^2 area of the southern portion of the knoll. The purpose of this systematic collection and the techniques which were used are discussed in section 4.2.2.(b). Secondly, isolated surface artifacts from other parts of the site were collected and recorded whenever encountered. All of these came from the badly disturbed area to the north of the driveway in the vicinity of the former mobile home.

Assemblage: In the systematic collection only indigenous artifacts and lithic detritus were collected whereas the collection of random finds was restricted to artifacts. Tables 11-17 quantify the artifacts and detritus which were recovered. Of the 49 surface artifacts catalogued, 27 were encountered during the systematic surface collection. All are made of stone and they include 3 bifaces, 1 scraper, 6 cores, 14 retouched flakes, and 3 utilized flakes. The number of artifacts per 5 x 5 m collecting unit ranged from 0

to 3, averaging less than 1 artifact per unit. No concentrations of artifacts were encountered.

Among the formed, surface-collected artifacts are 2 large projectile points (Fig. 20k,m), 3 leaf-shaped bifaces (Fig. 21d), a biface scraper (Fig. 21e), one end scraper, and 2 sidescrapers (Fig. 22e), a narrow-spurred graver, an antler splitting wedge, a bilaterally-barbed antler point (Fig. 23c), a bone splinter awl, and 6 flake cores.

All lithic detritus was recovered during the systematic surface collection. Of the 241 pieces collected, 11.5% were cryptocrystallines. Detritus flakes outnumbered block shatter more than 20 to 1 and almost 80% of the detritus flakes retain their striking platforms. The number of detritus pieces per 5 x 5 m collecting unit ranged from 0 to 22, averaging almost 4 items per unit. All but a few collecting units (exclusive of units located on the roadway) yielded at least 1 or 2 detritus pieces and the highest counts occurred along the northern and eastern margins of the collection area (Fig. 3).

Age and Cultural Affiliation: The large corner-notched point (Fig. 20m) is diagnostic of the Thompson phase. Unfortunately, this point came from the badly disturbed area near the mobile home foundation. The asymmetric stemmed point (Fig. 20k) from the same area may be diagnostic of the Kamloops phase since a similar point (Fig. 20)

was recovered in c.d. 39, a Kamloops phase house. The biface scraper from the same disturbed area is similar to one found in c.d. 45, a possible Thompson phase house. Lastly, the distinctive concave-sided chert endscraper (Fig. 22e) from the vicinity of the former mobile home may be diagnostic of the Thompson phase. Similar scrapers have been recovered in Thompson phase contexts (e.g. Wilson 1976: Fig. 43o).

No diagnostic artifact types were found on the knoll. Three leaf-shaped bifaces (Fig. 21d) were obtained from this area, however, and were not found elsewhere at the site. This type of biface may be diagnostic of the deposition period of cultural deposits in this area.

Although we can probably assume that land alterations on the knoll have caused only minimal lateral displacement of artifacts, a similar assumption cannot be made for the badly disturbed area to the north of the driveway. Here, deposits have been moved considerable distances (Fig. 8), and the likelihood of mixing is almost guaranteed. Unfortunately, all of the diagnostic artifacts came from this area and they seem to indicate that, while most of the displaced deposits probably originated from Thompson phase depressions such as c.d. 25, at least some Kamloops phase material is also present.

The recovery of 5 chalcedony flake cores during the

systematic collection may indicate a greater utilization of cryptocrystallines in the knoll area even though only 11.5% of the detritus was either chert or chalcedony. Nevertheless, a greater reliance on cryptocrystallines would be indicative of a Thompson phase affiliation for the buried deposits, a suggestion consistent with the results of the limited excavations in this area. This assumes, of course, that the surface material is a reliable indicator of the age and cultural affiliation of the buried deposits.

AUGER TESTING

A power auger was used experimentally to help determine the depth, stratification, and horizontal distribution of subsurficial deposits at several locations within the site. This technique was described in section 4.2.2.(c).

A total of 18 holes were drilled. Half of these were drilled within extant or buried cultural depressions including c.d.s 3, 11, and 25-27. The results of these efforts were included in this appendix in the discussion of the relevant cultural depressions.

Nine auger holes were not included in the above discussions. These holes are located in non-cultural sediments in inter-depression areas or they were drilled into buried cultural deposits which could not be assigned to a specific

cultural depression. These 9 holes are discussed in this section. They are identified by the following field numbers: Auguer Hole (AH) 1-3, AH 8, AH 10, and AH 14-17.

Location and Extent of Excavation: AH 1-3 were drilled along with AH 4 in an east-west line to the east of the excavation unit in c.d. 26. The 4 holes were located at distances of 2.7, 4.7, 6.7, and 8.7 m from the unit. AH 4, the most westerly hole, was located within c.d. 26 but the other 3 missed the buried depressions. These 3 holes were drilled to depths of 80 (AH 1), 55 (AH 2), and 72 (AH 3) cm below surface.

AH 8 is one of 4 holes drilled in an east-west line 50 cm south of the excavation unit in c.d. 27, at distances of 1, 4, 6, and 7.5 m to the east. AH 8, the most easterly hole, missed the buried depression but the others did not. AH 8 reached a depth of 35 cm below surface.

AH 10 is one of 3 holes drilled in a north-south line just behind the driveway cut bank to determine the location of c.d. 25's southern edge. The 2 most northerly holes encountered c.d. 25 but AH 10, located 2.5 m south of the cut bank, missed the depression. AH 10 was 61 cm deep.

AH 14-17, along with AH 13, were drilled in an east-west line at 2 m intervals with the most westerly hole (AH 13) located 2 m east of the excavation unit in c.d. 11. The 4 holes reached depths of 63 (AH 14), 59 (AH 15), 76 (AH

16), and 85 (AH 17) cm below surface.

Stratigraphy: A simple 2-layer stratigraphic sequence could be seen in 5 of the 9 holes: AH 2, 3, 8, 10, and 15. Each encountered a shallow, disturbed, cultural layer directly below ground surface, varying in thickness from 19 to 29 cm (including turf). These deposits were probably disturbed during the 1976 land alterations. Non-cultural deposits occurred below this layer. It is unlikely that these shallow cultural deposits can be attributed to buried cultural depressions; therefore, these holes were probably located in shallow or non-cultural deposits in inter-depression areas. These holes played an important part, however, in defining the boundaries of c.d. 25 (AH 10), c.d. 26 (AH 2 and 3), and c.d. 27 (AH 8).

A 3-layer stratigraphic sequence was noted in the other 4 auger holes: AH 1, 14, 16, and 17. In each case, a shallow, disturbed, cultural stratum was encountered directly below surface, identical to the upper layer in the other holes. Below this layer, however, occurred a thicker and apparently undisturbed cultural zone (possibly consisting of more than one layer) with thicknesses of 58 (AH 1), 41 (AH 14), 31 (AH 16), and 40 (AH 17) cm. Non-cultural sediments underlie these deposits.

These deeper cultural deposits probably indicate the presence of a buried cultural depression. AH 16 and 17 were

drilled in the vicinity of c.d. 16 according to the BCH map. Possibly these 2 holes encountered this depression. AH 14 was located near the eastern periphery of c.d. 11 and, although the cultural deposits in this hole are not as thick as those uncovered in the excavation unit in c.d. 11, this test may be located on the more shallow c.d. 11 bench. AH 1 may have also encountered a buried depression located to the east of c.d. 26, but no depression is recorded in this area on any of the maps, including the BCH map. Additional work will have to be carried out in this area to verify this possibility.

Assemblage: A small assemblage of 4 artifacts (Tables 11-13), 36 pieces of lithic detritus (Table 14), a few unidentifiable faunal remains (Tables 15 and 16), and the occasional piece of charcoal was recovered from the 9 auger holes. A glass shard and a chalcedony core came from AH 1, a basalt retouched flake was found in AH 16, and a basalt endscraper originated in AH 17. Lithic detritus was noted in all holes except for AH 3, 14, and 17. AH 8 yielded the most detritus (n = 18), all but one of which is cryptocrystalline. Unidentifiable bone fragments came from AH 16, and AH 17 yielded some charcoal, one piece of shell, and 2 tooth fragments.

Features: n = 0.

No features could be identified with any certainty

due to the limited nature of the auger testing. A buried cultural depression may be present in the holes with the deeper cultural deposits, but this will require verification.

Age and Cultural Affiliation: Because of the absence of diagnostic artifacts, no age estimates or assessments of cultural affiliation are possible. The glass fragment from AH 1 came from the disturbed layer near the surface and is not a chronological indicator. The high incidence of cryptocrystalline detritus in AH 8 may be indicative of a Thompson phase affiliation for the area between c.d.s 26 and 27, but this is not certain.

Condition: Not applicable.

Comments: As noted in section 4.2.2.(c), auger testing works best when employed in areas where the basic subsurficial stratigraphy is already known, where rocks are minimal, and where the strata are easily differentiated visually. This technique does provide a fast and effective way of determining the depth, stratification, and horizontal location of buried cultural deposits, even though "follow up" excavations may sometime be necessary.

APPENDIX III. DESCRIPTIVE ARCHAEOLOGY: THE RECOVERED MATERIAL

In this appendix the recovered remains from EdQx 15 are described. The discussed data classes are: artifacts, lithic detritus, faunal remains, botanical remains, fire-altered rock, features, and human remains. Each of these classes is described separately and, for ease of reference, most of the distributional data is given in a tabular form. When necessary, terminology, classification systems, and any specialized analysis, are described in the introduction to the section.

Artifact distributional data is given for each tested cultural depression (Tables 11, 12, and 13). Thirty-five of the tools have been illustrated by Jerry Pettyjohn (Figs. 20, 21, 22, and 23). There is also a discussion of the distribution of lithic detritus (Table 14) by raw material and flake type.

The faunal material is quantified by count and weight for both identified and unidentified elements (Tables 15 and 16). The distribution of identified specimens (Table 17) gives a good indication of species utilization patterns. For the identified remains, there is a discussion of general population characteristics and interpretive comments are made.

Botanical remains are discussed in terms of their distribution (Table 18) and what this implies in the archaeological context. Fire-altered rock and features are briefly described, primarily by the presentation of distributional tables (Tables 19 and 20, respectively). The features were discussed thoroughly in appendix II.

Finally, the human skeletal material found at this site, consisting of a few cranial fragments, is briefly described.

ARTIFACTS

Artifacts are manually-portable objects showing evidence of intentional modification or use. The 497 EdQx 15 artifacts can be divided into 2 broad categories: Euro-american manufactured (n = 191) and indigenously manufactured (n = 306). The Euro-american items are made of ceramics, glass, metal, plastic, shell(?), and wood. Indigenous artifacts are made of antler, bone, mineral, and stone. Artifacts were found while excavating (86.7%), surface collecting (10.0%), and auger testing (3.3%).

In the description of artifacts, emphasis will be on the indigenous items. The Euro-american artifacts are indicative of recent site disturbance, and do not relate to the prehistoric native occupations. The distribution of Euro-american tools by cultural depression, and indigenous tools by raw material and cultural depression, is given in Table 11.

The artifact categories are based on raw material and class. The class terms represent currently accepted class names. These names are often functional and are useful labels, even though the inferred function may not be valid. Each artifact class will be discussed, and diagnostic or unusual items will be described separately. Measurements will be given for separately-described artifacts that are complete or almost complete. All measurements are in

TABLE 11

Distribution of Euro-american and indigenous artifacts.

	C.D. #																
	1	3	7	11	19	25	26	27	28	39	41	42	45	53	97[1]	99[2]	Totals
Euro-American	6	1	20	7	33	3	6	1	3	12	72	-	26	-	1	-	191
Indigenous																	
Lithic	7	2	21	15	28	8	9	7	2	73	9	2	36	2	3	46	270
Bone	-	-	9	-	1	1	-	-	-	8	1	-	1	-	-	1	22
Antler	1	-	-	-	1	-	-	-	-	3	1	-	-	-	-	2	8
Tooth	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	1
Mineral	-	-	2	-	-	-	-	-	-	2	-	-	1	-	-	-	5
Totals	14	3	52	22	63	12	15	8	5	99	83	2	64	2	4	49	497

[1] Auger tests not within a cultural depression.

[2] Surface collected material.

millimetres (mm) using the following format: "length" x "width" x "thickness". Measurements in parentheses indicate that the tool was incomplete along that axis.

Artifact numbers are given for some artifacts. These numbers consist of 2 digits separated by a hyphen, with the first denoting the cultural depression and the second the tool number for that depression. If the cultural depression number is 97, the artifact was found while auger testing. If an auger test artifact was found in a cultural depression, it is included in the totals for that depression. Surface collected artifacts are denoted by 99.

Artifact terminology follows Loy and Powell (1977) and Stryd (1973a).

1. ARTIFACTS: EURO-AMERICAN

Euro-american artifacts occurred frequently at the Monte Creek site. These items represent Historic period debris not associated with the aboriginal occupation. They can, however, give some insight into the type of disturbance activities that took place. Single artifact numbers were sometimes given to aggregates of associated items; therefore, the totals in Table 12 do not represent the actual number of items present.

Euro-american artifacts were located in every

TABLE 12

Distribution of Euro-american artifact classes.

	C.D. #																
	1	3	7	11	19	25	26	27	28	39	41	42	45	53	97[1]	99[2]	Totals
CONTAINER FRAGS.																	
Metal	-	-	-	2	1	-	-	-	-	1	3	-	1	-	-	-	8
Glass	1	-	-	1	13	3	2	1	2	3	2	-	11	-	-	-	39
Porcelain	-	-	-	-	-	-	-	-	1	-	-	-	3	-	-	-	4
?	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
BUTTONS																	
Metal	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Glass	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
Plastic	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
Shell(?)	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	1
MISC. FRAGS.																	
Metal	-	-	4	-	10	-	-	-	-	8	4	-	2	-	-	-	28
Glass	1	-	1	2	1	-	-	-	-	-	-	-	-	-	1	-	6
Porcelain	-	-	2	-	2	-	1	-	-	-	-	-	-	-	-	-	5
Plastic	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
Cloth	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
OTHER																	
Nails	-	-	-	-	-	-	-	-	-	-	41	-	5	-	-	-	46
Spikes	-	1	-	-	-	-	-	-	-	-	12	-	1	-	-	-	14
Wire	-	-	-	-	1	-	-	-	-	-	8	-	1	-	-	-	10
Skeet Frags.	2	-	13	2	2	-	-	-	-	-	-	-	-	-	-	-	19
Wood Stakes	1	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	3
Shotgun Shells	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
Totals	6	1	20	7	33	3	6	1	3	12	72	0	26	0	1	0	191

auger-tested or excavated depression except for c.d.s 42 and 53. C.d. 41 contained the most items, 37.7% of the total. In this depression the artifacts were primarily heavily-corroded metal spikes, round-shanked nails, and wire fragments.

The skeet fragments were restricted to the west end of the site. Several were found in prehistoric deposits, moved there by gopher activity. The 2 shotgun shell casings, an Imperial 12 gauge and a Remington 20 gauge, were found at the opposite end of the site.

Pieces of glass, primarily from bottles, were the most evenly distributed item. These were found in every tested depression except for c.d.s 3, 42, and 53. Porcelain fragments, mostly from dishes, were found in c.d.s 7, 19, and 26.

Nails were found in 2 depressions: c.d.s 41 and 45. All of the c.d. 41 specimens are round-shanked. In c.d. 45, 2 square-shanked nails were recovered and these are likely older specimens.

The earliest of these artifacts could date to the 1860s when this area was first pre-empted (see section 3.2). Over the past 120 years, various habitation, construction, horticultural, and recreational activities have taken place (see section 5.2). Some of the recovered items are quite recent (plastic, metal spikes), but others (glass and

porcelain fragments, square nails) could date to the early Historic period.

2. ARTIFACTS: INDIGENOUS

These items make up 61.6% of the recovered assemblage and are the results of the prehistoric utilization of this site. Their distribution by class and raw material for each cultural depression is given in Table 13. Stone tools make up 88.2% of the aboriginal assemblage, followed by bone (7.3%), antler (2.6%), mineral (1.7%), and tooth (0.3%).

STONE

Almost all of the 270 stone items were manufactured by chipping. A few objects (hammerstones, boiling stones) were picked up and used without modification. Retouched and utilized flakes (n = 153) comprised 58.2% of the chipped stone items. The most common formed chipped tools are bifaces (14.8%), scrapers (8.4%), and projectile points (7.6%).

Projectile Points

This class consists of chipped, pointed, stone tools with a hafting element modified by notches, indentations, or stems. It is assumed they were attached to an arrow,

TABLE 13

Distribution of indigenous artifact classes.

	C.D. #																
	1	3	7	11	19	25	26	27	28	39	41	42	45	53	97[1]	99[2]	Totals
LITHIC n = 270																	
Proj. Point	–	–	4	3	1	–	–	–	–	7	–	1	2	–	–	2	20
Biface	1	2	2	1	4	2	2	–	–	15	–	–	1	–	–	9	39
Scraper	–	–	4	–	1	3	1	–	–	4	1	–	3	–	1	4	22
Biface/ Scraper	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	1	2
Backed Knife	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	2
Drill	–	–	–	–	–	–	–	–	–	–	–	–	2	–	–	–	2
Graver	–	–	–	–	–	–	1	1	–	1	–	–	2	–	–	1	6
Eccentric	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1
Core	–	–	–	1	–	–	–	–	2	2	–	–	–	–	1	6	12
Saw	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Ret'd Flake	4	–	8	7	12	2	2	4	–	31	7	–	21	1	1	19	119
Ret'd Lamellar	–	–	–	–	1	–	1	–	–	–	–	–	–	–	–	–	2
Ut'd Flake	1	–	3	3	8	–	2	1	–	5	1	1	4	1	–	4	34
Ut'd Chunk	–	–	–	–	–	–	–	1	–	–	–	–	–	–	–	–	1
Boiling Stone	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Hammerstone	–	–	–	–	–	–	–	–	–	6	–	–	–	–	–	–	6
BONE n = 22																	
Awl	–	–	–	–	–	–	–	–	–	1	–	–	1	–	–	1	3
Needle	–	–	–	–	–	1	–	–	–	1	–	–	–	–	–	–	2
Pin	–	–	1	–	–	–	–	–	–	–	–	–	–	–	–	–	1
Misc.	–	–	8	–	1	–	–	–	–	6	1	–	–	–	–	–	16
ANTLER n = 8																	
Wedge	1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	2
Haft	–	–	–	–	1	–	–	–	–	–	–	–	–	–	–	–	1
Flaker/ Hammer	–	–	–	–	–	–	–	–	–	3	–	–	–	–	–	–	3
Proj. Point	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1	1
Misc.	–	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	1
MINERAL n = 5																	
Ochre	–	–	2	–	–	–	–	–	–	2	–	–	1	–	–	–	5
TOOTH n = 1																	
Die	–	–	–	–	–	–	–	–	–	1	–	–	–	–	–	–	1
Totals	8	2	32	15	30	9	9	7	2	87	11	2	38	2	3	49	306

atlatl, or spear, although they may also have been used as hafted knives.

There are 13 complete or almost-complete specimens. Of the 7 incomplete points, 4 are missing a blade, one is missing a base, one a tip, and one a base and a tip. There are 7 side-notched, 7 corner-notched, and 2 stemmed points, with the type of notching difficult to determine on 4 fragments. All of these points are made of basalt, except for #39-99 which is chert. Each of these points is individually described.

#7-8: This is a small, complete, triangular, side-notched point (Fig. 20b), with a straight base and straight blade margins. It is a typical Kamloops side-notched point. 26.3 x 11.9 x 3.2

#7-16: This is a complete, triangular, side-notched point (Fig. 20e), with a straight base and straight blade margins. The notches are shallow and occur in the middle third of the tool. A small tang is present along one lateral base margin. This type is common in the latter part of the Kamloops phase. 17.4 x 10.5 x 3.5

#7-19: This is an almost-complete, large,

corner-notched point (Fig. 20g) with convex blade margins and a straight base. It is broken distally and on each shoulder. It may have been barbed. (36.3) x 24.6 x 5.5

#7-32: This small, asymmetric, side-notched point (Fig. 20d) is missing a small portion of the tip. It has a straight base and straight blade margins. One shoulder is slightly barbed, and the other appears to have been broken and reworked. It is much wider at its base than across the blade. This specimen could be from c.d. 53. It is a variant of the Kamloops side-notched point. (23.1) x 16.1 x 3.6

#11-1: This small, side-notched point (Fig. 20c) has one recurved and one straight blade margin and a slightly concave(?) base. The base is broken bilaterally with one side almost completely missing. This point is unusual because of its very wide, deep notches, and almost heart-shaped blade. 25.0 x (14.8) x 3.8

#11-13: This triangular, side-notched point (Fig. 20f) is missing part of its tip. It has a

concave base and straight blade margins. This is a large variant of the Kamloops side-notched point and is probably indicative of the latter part of the Kamloops phase. (27.4) x 18.4 x 3.4

#11-16: This is a crude, asymmetric, corner-notched point (Fig. 20h) made on a non-vitreous basalt(?) flake. There is evidence of the striking platform on one shoulder. Bifacial secondary retouch occurs on the blade margins, but the dorsal and ventral surfaces are unmodified. The base has some unifacial retouch but is not thinned. Dark staining near the tip may be the result of a fire. 37.9 x 28.0 x 4.3

#19-3: This is the proximal fragment of a fairly large, corner-notched point (Fig. 20j). The base and a small part of the blade are present. It has a concave base and has one barbed and one broken shoulder. A portion of the broken distal margin has steep unifacial retouch suggesting it was re-utilized. This type is typical of the Thompson phase. (21.9) x (24.9) x (4.3)

#39-3: This is a crude, asymmetric, stemmed point

(Fig. 20ℓ) made on a flake. The blade margins are irregular and the stem is roughly triangular. Secondary bifacial retouch is present along the blade margins, but there is no primary retouch on the blade surfaces. The striking platform is on the base which is not thinned. 49.9 x 20.9 x 6.1

#39-14: This is the blade portion of a small, triangular point, probably side-notched. The blade margins are straight.

#39-18: This is part of the base of a small point, probably side-notched.

#39-27: This is a lateral, base fragment from a small point, probably side-notched.

#39-69: This is a blade fragment from a small, corner- or side-notched point. It has straight blade margins and the tip is missing. Secondary bifacial retouch occurs on both blade margins, with primary retouch on only one surface.

#39-78: This small, triangular, side-notched point (Fig. 20a) has two-thirds of its base

missing. The fragmentary base was reworked and may have been hafted a second time. It has straight blade margins. 27.1 x (14.4) x 4.4

#39-99: This small, chert base is probably from a Kamloops side-notched point.

#42-1: This is an asymmetric, medium-sized, corner-notched point (Fig. 20i) made on a flake. It has a straight base and straight blade margins with one broken shoulder. Both blade margins have bifacial secondary retouch; the dorsal and ventral surfaces are unmodified. The base has been thinned. 37.3 x 22.9 x 2.9

#45-19: This is a large, asymmetric, corner-notched point (Fig. 20o) with a slightly convex base. The distal half of the blade is missing. One shoulder has a long, well-defined barb; the other is unbarbed, although it may have been broken and reworked. This type occurs during the Thompson phase. (29.2) x 29.0 x (4.3)

#45-35: This long, slender, finely-made, corner-notched point (Fig. 20n) is missing part of one

shoulder and the lateral portion of one side of the base. It has a straight base and one straight and one slightly convex blade margin. This type is typical of the Thompson phase. 63.5 x 22.5 x 6.4

#99-9: This is a long, slender, finely-made, corner-notched point (Fig. 20m) with a concave base and convex blade margins. A small fragment is missing basal-laterally. The base was thinned by removing 3 long, thin flakes parallel to the tool's long axis, 2 from one side and the third from the opposing surface. This type occurs during the Thompson phase. 70.0 x 23.0 x 7.2

#99-10: This crude, poorly-made, stemmed point (Fig. 20k) has straight blade margins and a quadrilateral base. The blade has both primary and secondary retouch, but the base is largely unmodified. This may be an unfinished point that was never utilized. 40.7 x 20.5 x 6.3

Bifaces

This class includes bifacially flaked, formed tools that differ from projectile points only in the lack of a

well-defined hafting element. These tools usually functioned as knives, but were also used for other purposes.

This group consists of 7 complete and 32 broken specimens. The latter consists of 11 distal, 5 medial, and 8 proximal fragments, plus 6 irregular pieces and 2 almost-complete items. The most common raw material is basalt (n = 36), with some chalcedony (n = 3). The basalt grades from coarse-grained to glassy varieties.

Tool shape can only be evaluated on complete or almost-complete specimens (n = 9). There are 3 leaf-shaped, 2 excurvate, 1 asymmetric oval, 2 pentagonal, and 1 asymmetric tear-shaped bifaces.

The bifaces are grouped according to how much and what part of the tool is present.

(i) Complete or almost-complete bifaces. All of these are made of basalt.

#1-11: This is a large, asymmetric, ovate tool (Fig. 21h) made on a flake with the striking platform still present on one lateral margin. Bifacial retouch is restricted to the margins except near the striking platform which is largely unmodified. The artifact has wear polish and rounded edges, a characteristic of scraping tools. The

long striking platform was probably left intact to leave a dull surface so the biface could be hand held. There is no evidence that it was hafted. 75.7 x 50.9 x 10.7

#11-19: This is a pentagonal biface (Fig. 21c), broken or snapped proximally. This tool is common in the Kamloops phase and many of these appear to have functioned as drills. (37.7) x 26.8 x 6.9

#39-41: This pentagonal biface, broken or snapped proximally, is very similar to specimen #11-19. Specimen #39-41 has extensive wear polish on its tip, distal-lateral margins, and on surface projections near the tip. The wear pattern and its thick cross-section strongly suggest it was used as a drill, with proximal thinning for hafting. This type is typical of the Kamloops phase. (44.9) x 27.4 x 8.2

#39-45: This asymmetric, excurvate biface (Fig. 21f) is made on a very fine-grained, glassy basalt. The base is straight and thinned, possibly for hafting. 56.6 x 29.8 x 5.9

#39-46: This is a small, excurvate biface with a rounded tip and corners. It is made on a coarse-grained basalt with fairly poor workmanship, and has a thick, lens-shaped cross-section. There is slight wear polish on the lateral margins, but none on the tip. 34.5 x 26.9 x 7.3

#39-50: This asymmetric, irregularly-shaped biface has one convex blade margin and one margin with a well-defined shoulder. The tool has extensive wear polish similar to specimen #39-41, suggesting use as a drill. 45.1 x 19.1 x 5.2

#99-7: This symmetric, leaf-shaped biface is made on a coarse-grained basalt and has small patches of calcium carbonate on its surface. The tip is broken and the base is blunted to facilitate hafting. The blade margins are slightly recurved distally, and the artifact has a fairly thick, lens-shaped cross-section. (64.3) x 21.3 x 8.1

#99-38: This is a symmetric, leaf-shaped biface made on a coarse-grained basalt. It has a thick, lens-shaped cross-section. 69.2 x 27.9 x 10.1

#99-48: This symmetric, leaf-shaped biface (Fig. 21d) is finely chipped on a medium-grained basalt. The base is blunted and thinned to facilitate hafting. It has a thin lens-shaped cross-section. 77.8 x 24.1 x 6.1

(ii) Distal fragments

#7-11, 19-5, 19-40, 26-13, 39-7, 39-24, 39-44, 39-63, 45-36, 97-14, 99-2

These consist of tip fragments of bifacially-chipped, pointed stone artifacts. These may be from projectile points, drills, or bifaces, but this is not determinable. These are all made of basalt.

(iii) Medial fragments

#7-54, 39-67, 39-88, 99-13, 99-23

These are bifacially-chipped, formed tools, broken proximally and distally. They could be from projectile points, drills, or bifaces. They are all made of basalt.

(iv) Proximal fragments

#19-31, 19-59, 25-11, 26-7, 39-8, 39-22, 39-55, 99-1

These are proximal fragments of bifacially-chipped formed stone artifacts and could be from projectile points (#19-31, 39-22?), drills (#25-11?), or bifaces. Six are

made of basalt and 2 of chalcedony (#19-31, 26-7). Specimen #99-1 appears to be from a large, leaf-shaped biface made on a coarse-grained basalt. The end is blunted and thinned, possibly for hafting, but also has extensive wear polish. This could be intentionally ground, but is most likely the result of use.

(v) Miscellaneous fragments

#39-42, 39-47, 97-9, 97-15, 99-14, 99-34

These are irregularly-shaped biface fragments that cannot be assigned to any of the above categories. Five are made of basalt, and one of chalcedony. Specimen #97-15 may be a drill bit fragment.

Scrapers

Scrapers are formed flake or core tools with marginal unifacial retouch of fairly uniform height. Some may have been hand held, but most were hafted and used primarily for hide preparation. Nine of the specimens are broken, but on only 4 can the original shape not be determined.

The most common raw material is basalt (n = 12), typically a fairly glassy variety. These are 9 chalcedony and 1 chert scraper. This represents a high percentage of the more scarce materials which could be due to a couple of factors. The cryptocrystallines are harder than basalt and

may have been preferred for scraping tools. In addition, 5(?) of the cryptocrystalline scrapers are from Thompson phase depressions where this material is more common.

The scrapers can be broken down into different types based on the location of the primary working edge and on the extent of retouch along this edge. There are 7 convex endscrapers, 7 sidescrapers, 4 scrapers with continuous marginal retouch, and 4 fragments whose original shape cannot be determined.

(i) Endscrapers

#7-25, 7-45, 7-51, 25-9, 39-39, 97-13, 99-3

These have the primary working edge located transverse to the tool's long axis. All are made on basalt. Five have a convex distal working edge with well-defined junctures between the lateral edges. Two are deep convex endscrapers with no clear junctures between the lateral and distal margins.

(ii) Sidescrapers

#7-36, 19-16, 26-9, 39-48, 39-58, 99-21 (Fig. 22e), 99-27

These have their primary working edge along one or both lateral margins. The lateral edges are not necessarily parallel to the tool long axis. Three of these specimens are chalcedony and 4 are basalt. The 3 chalcedony

sidescrapers are rectangular and made on flakes. The striking platform is still present on 2 of these, and 2 have well-defined distal retouch. The basalt sidescrapers are rectangular, except for #99-27 which is triangular with unifacial retouch on 2 edges and bifacial retouch on the third, possibly to thin this edge.

(iii) Continuous scrapers

#25-3, 41-70, 45-53, 45-57

This group has unbroken unifacial retouch along the entire tool edge. All 4 specimens in this group are chalcedony: one has an irregular outline with several sharp projections (#45-57, Fig. 22a), one is crescent-shaped (#41-70, Fig. 22b), one is rectangular (#25-3, Fig. 22c), and one is triangular (#45-53, Fig. 22d). Both #41-70 and #45-57 may have been used as gravers.

(iv) Miscellaneous scrapers

#25-7, 39-34, 45-23, 99-17

These are broken specimens that could not fit into any of the above categories. Two are chalcedony (#25-7, 99-17) and may be from continuous scrapers. The chert (#45-23) and basalt (#39-34) specimens are small fragments, possibly from convex endscrapers.

Biface/Scrapers

This category contains formed artifacts that have characteristics of both bifaces and scrapers.

#45-60: This is a basalt, roughly-rectangular tool with bifacial retouch along both lateral margins. It has a steep, unifacially-retouched, concave, distal end. Proximally, part of the striking platform is still present. (49.0) x 29.5 x 9.3

#99-12: This symmetric, basalt, excurvate tool (Fig. 21e) has bifacially-retouched, lateral margins; a concave, unifacially-retouched base; and a convex, unifacially-retouched tip. The tip exhibits some wear polish as do both lateral margins. 80.9 x 29.0 x 10.2

Backed Knives

This class consists of tools with a well-defined bifacial cutting edge, opposed by a distinct" backing" formed by steep unifacial retouch. The backing probably permitted these artifacts to be hand held.

#25-1: This basalt, asymmetric, leaf-shaped tool (Fig. 21g) has a lateral cutting edge and an

opposing "backed" edge formed by steep unifacial retouch. 56.8 x 15.7 x 6.9

#39-40: This is a triangular, basalt tool with a slightly concave, bifacial, cutting edge. A second edge is "backed" using steep unifacial retouch; the third edge is broken off. 45.8 x (41.5) x 5.8

Drills

Drills are bifacially-chipped, formed artifacts with elongated projections called bits. Bits are generally lens-shaped to circular in section and often exhibit extensive wear polish. Two drill bit fragments were recovered, both from c.d. 45.

#45-37: This parallel-sided, chalcedony drill bit has a triangular tip and a lens-shaped cross-section.

#45-43: This basalt, drill bit distal fragment is wider near the distal end than along most of the bit. Distally, it has a lens-shaped cross-section. The cross-section becomes more oval proximally. A small amount of wear polish is present

near the tip.

Gravers

This class consists of flakes with small formed projections which often exhibit considerable wear. Three chalcedony and 3 basalt gravers were recovered. Five of these (#26-14 (Fig. 21b), 39-84, 45-40, 45-64, 99-18) are narrow spurred (sharp) while one (#27-4, Fig. 21a) is wide spurred (rounded).

Carlson (1978:64) places narrow spur gravers in the Kamloops phase; however, 3 of the EdQx 15 specimens (#26-14, 45-40, 45-64) are from probable Thompson phase depressions. Each of these 3 artifacts has 2 lateral flake margins and a prominent arris meeting to form the graving point, which is minimally retouched. These trihedral sharp gravers may possibly be diagnostic of the Thompson phase.

Eccentrics

This class subsumes all unusually-shaped chipped artifacts not assignable to any other group. Often this class will include representational items, sometimes thought to be zoomorphic.

#19-15: This is a small, complete, chipped basalt item (Fig. 22f) with serrated lateral margins

formed by small notches. Each side has 6 projections and there is also a projection proximally and distally. The distal projection forms a 45° angle with the tool's long axis. This appears to be a representation of a small animal or insect. 31.7 x 5.5 x 3.3

Cores

This class includes objects from which flakes have been removed and which exhibit numerous negative bulbs of applied force. They are devoid of utilization or secondary retouch. Three-quarters of the EdQx 15 cores were found on the surface or during auger tests. There were 5 basalt, 1 chert, and 6 chalcedony specimens. One of the basalt cores is a large cobble with only a few flakes removed. Three basalt and 3 chalcedony cores still have cortex.

Saws

Saws are generally tabular artifacts with a straight or slightly convex working edge formed by chipping or grinding, and extensive wear polish parallel to the working edge.

#39-59: This is an argillite artifact (Fig. 21i) with a working edge formed by chipping. Edge wear

has produced a flat working edge with striations parallel to this edge.

Retouched Flakes

This class includes irregularly-shaped flakes with one or more intentionally modified edges for use as tools. They occur as 4 different types; unifacial (n = 75), bifacial (n = 20), alternate (n = 13), and unifacial/bifacial combined (n = 10). One flake (#7-52) was lost and is not considered in any of the retouched flake totals.

Unifacially-retouched flakes have marginal retouch on only one surface. Flakes with alternate retouch have unifacial retouch on the dorsal and ventral surfaces but not at the same location. When flakes are removed from dorsal and ventral surfaces at one location it is bifacial retouch. Several artifacts had both unifacial and bifacial retouch and fall into the unifacial/bifacial class.

The most common raw material was basalt (n = 106), with some chest (n = 8), and chalcedony (n = 4). There were 36 (30.5%) specimens with cortex still present and 52 (44.0%) still had an intact striking platform. A large percentage (n = 75; 63.6%) of the flakes were broken. Many of the breaks truncate a retouched edge suggesting that the artifacts were broken during use.

Retouched Lamellar Flakes

These are blade-like flakes, distinct from micro- and macroblades in that they were not removed using indirect percussion. Both specimens are chalcedony, one is complete (#26-6) and the other is broken (#19-60). The latter has steep unifacial retouch along one lateral margin, while the former has poorly-defined, discontinuous unifacial retouch along both edges.

Utilized Flakes

This category includes unretouched flakes and flake fragments exhibiting marginal use modification. Wear polish or small flake scars were usually the basis for placement in this class. In this sample, 28 specimens showed use on only one edge; the remainder had 2 or more utilized edges.

Raw materials were mostly basalt (n = 28), with some chert (n = 3) and chalcedony (n = 3). There were 5 specimens with cortex still present and most (n = 24) had intact striking platforms. Over 50% (n = 18) of the flakes were broken, probably from use.

Utilized Chunks

Utilized chunks are blocky, irregularly-shaped chipped stone artifacts that do not fit into the utilized flake or core categories.

#27-3: This is a bifacially-modified, basalt artifact with some crushing along one edge. 55.2 x 36.2 x 16.3

Boiling Stones

Boiling stones are generally small, spherical, unmodified pebbles, heated and used to boil water to cook food. C.d. 1 contained one small spherical pebble of unidentified raw material that may have functioned as a boiling stone. This pebble has a small crack which is the only indication of possible fire alteration.

Hammerstones

Hammerstones are unmodified pebbles and cobbles used for hammering which results in pitted surfaces. All 6 specimens come from c.d. 39. The raw materials are granite (n = 4) and guartzite (n = 2). Pitting usually appeared on the ends of these oval-shaped stones.

BONE

Bone was worked by a variety of techniques including grinding, cutting, and sectioning. Incised lines were the only decorative feature. The bone artifacts will be described by class.

Awls

Awls are slender, pointed pieces of bone, distinguished from bone points by the lack of butt modification for hafting. They are primarily perforating tools.

#39-97: This is a ground, cut, proximal fragment of a possible deer radius. The tip is missing but it is assumed that the taper continued to a sharp point.

#45-52: This is a bone splinter awl (Fig. 22g) made on a large, mammal long bone. It is sharply pointed with a circular distal cross-section and is broken proximally.

#99-6: This consists of 2 fragments of a bone awl or projectile point tip. They are brittle, and fire-altered to a glossy black sheen.

Needles

Needles are generally long, slender, curved pieces of bone with a lens-shaped "eye".

#25-8: This is a curved, parallel-sided, ground and polished piece of bone, probably a rib from a

small mammal. It has been ground extensively and cancellous tissue has been exposed on one side. There is no eye present and its classification as a needle is tentative.

#39-21: This flat, thin piece of bone is broken at both ends and exhibits part of an "eye" at one end.

Pins

These are tools that probably functioned as fastening devices.

#7-24: This unique, complete artifact (Fig. 22h) was found in 2 separate pieces in the same excavation unit. It is made on a bear baculum and is interpreted as possibly being a blanket pin. It can be viewed as having 2 distinct components: a long slender body, and an elongated, conical "head" that extends over about one-fifth of the artifact. Two-thirds of the body is decorated by 2 spiralling, incised lines that intersect in 8 locations. The head is girdled by 12 parallel, deeply-incised lines and may be a rattlesnake representation. A 13th line is present on the

proximal part of the head but it poorly executed and not deeply incised. Red ochre is present in all of the incised lines. This "paint" may have been present over the entire surface. 214.3 x 3.5 (body diameter) x 6.7 (maximum head diameter)

Miscellaneous Worked Bone

#7-21, 7-27, 7-30, 7-40, 7-41, 7-42, 7-43, 7-44, 19-23, 39-68, 39-74, 39-90, 39-91, 39-92, 39-93, 41-79

There were 16 fragments of worked bone not assignable to a particular class. These fragments consist of pieces of cut, ground, and sectioned bone. With these bone fragments it was not possible to determine the bone element or the species represented.

ANTLER

This group consists of artifacts made on antler beams and tines. Two ungulate species are represented: elk and mule deer. The larger tools were made from elk antler with smaller items on deer antler.

Wedges

This class includes "wedge-shaped" tools used primarily for wood working, and having a characteristic bevelled edge.

#1-13: This complete specimen (Fig. 23a) is made on an elk antler beam. It has a unifacially-bevelled, convex working end. The butt is still present proximally, and shows signs of battering wear. Laterally, a branch has been removed, probably by cutting, leaving a large protrusion. 145.1 x 60.1 x 57.8

#99-20: This is a badly-eroded, incomplete tool made on an elk antler beam. The working edge is missing as is most of one side. The remaining side has had a small branch removed, leaving a slight protrusion. Proximally, the butt is still present (149.7) x 73.4 x (68.2)

Hafts

This class includes hollowed antler items that probably functioned as handles for hafted tools.

#19-53: This is a broken, weathered piece of antler. It has an elliptical cross-section and is hollow. (185.6) x 48.9 x 30.3

Flaker/Hammers

This class consists of antler tine used for lithic

tool manufacture. All 3 artifacts are distal portions of deer antler tines. They are broken proximally, and one is badly eroded. The tips show wear polish and some grinding. Two of these were found in association with a cluster of pressure flakes in c.d. 39.

Projectile Points

These are pointed antler objects, often characterized by uni- or bilateral barbs and/or base modification. They were probably hafted and used on a projectile.

#99-4: This is a bilaterally-barbed, antler point (Fig. 23c) with single, triangular, opposing barbs, a triangular blade, and a tabular base. One barb is broken and missing. There is no line guard. 81.8 x (18.9) x 6.5

Miscellaneous Worked Antler

This category consists of antler artifacts not assignable to a particular class.

#41-78: This is a triangular fragment of cut antler.

TOOTH

There is only one tooth artifact in this assemblage.

Dice

This class consists of gambling markers usually made on rodent incisors (primarily beaver). These dice are characterized by incised lines or drilled holes on the tooth surface.

#39-81: This is the distal portion of a beaver incisor (Fig. 23b). The proximal end was intentionally cut off and the cut surface was ground smooth. Distally, the bevelled cutting edge was ground, perhaps to ensure that the die was symmetrical or to remove sharp edges. Five, fairly evenly-spaced holes, 1.5 - 2.0 mm deep, were drilled into the medial tooth surface. Teit (1900:272) refers to a game played by women using beaver tooth dice. One die, called the "man", has 8 incised lines on one surface. Its "mate" has 5 parallel incised lines with "dots" in the middle of each line. The EdQx 15 specimen is similar to this "mate" die except for the incised lines. 34.9 x 6.4 x 5.9

MINERAL

Five small pieces of ochre were recovered. All were red hematite except for one piece of yellow-orange limonite(?) from c.d. 39.

LITHIC DETRITUS

This category includes all flaked lithic material not classified as tools. It is divided into detritus flakes and block shatter, with the former partitioned into platform-bearing flakes and flake shatter, depending on the presence or absence of a striking platform. Block shatter is angular, "blocky" material that does not have flake-like characteristics. Terminology and definitions follow Pokotylo (1978). Table 14 gives the distribution of the different forms of flaking detritus.

The most common raw material was basalt (88.0%), with some cryptocrystallines (cherts and chalcedonies) (11.9%) also occurring. Other types of raw material were very infrequent (0.1%). The ratio of basalt to cryptocrystalline items (calculated for depressions with $n > 50$) is highest in c.d.s 11, 41, and 45, and lowest in c.d.s 26 and 42.

Detritus flakes are the most commonly occurring item, making up 95.3% of the entire assemblage. Most of these flakes have striking platforms: 89.0% of the basalt and 90.4% of the cryptocrystalline flakes are platform-bearing. Block shatter makes up 4.2% of the basalt and 9.3% of the cryptocrystalline detritus totals.

Cortex was present on 3.2% and 7.8% of the basalt and cryptocrystalline detritus flakes, respectively. For block shatter, the figures are 13.0% for basalt and 10.4% for

TABLE 14

Distribution of flaking detritus.

	Total Detritus			Flakes									
				Platform-bearing			Shatter			Block Shatter			
	B[1]	C-C	O	B	C-C	O	B	C-C	O	B	C-C	O	Total
1	6	0	0	4	0	0	2	0	0	0	0	0	6
3	4	1	0	4	1	0	0	0	0	0	0	0	5
7	72	10	0	59	9	0	8	0	0	5	1	0	82
11	216	16	0	187	16	0	22	0	0	7	0	0	232
19	211	29	0	162	20	0	29	2	0	20	7	0	240
25	151	30	0	133	28	0	13	2	0	5	0	0	181
26	282	70	0	252	63	0	23	4	0	7	3	0	352
27	134	11	0	112	10	0	20	0	0	2	1	0	145
28	11	11	0	10	11	0	0	0	0	1	0	0	22
39	630	68	3	541	57	1	57	3	0	32	8	2	701
41	66	2	0	59	2	0	1	0	0	6	0	0	68
42	113	37	0	96	26	0	13	6	0	4	5	0	150
45	622	45	1	548	36	0	60	5	0	14	4	1	668
53	8	0	0	8	0	0	0	0	0	0	0	0	8
97[2]	18	18	0	16	13	0	1	5	0	1	0	0	36
99[3]	216	25	0	163	19	0	42	6	0	11	0	0	241
Totals	2760	373	4	2354	311	1	291	33	0	115	29	3	3137

[1] B = basalt, C-C = chert and chalcedony, O = Other

[2] Material from auger tests outside of cultural depressions.

[3] Surface collected material.

cryptocrystalline.

Most of the EdQx 15 detritus is the result of tool modification and the final stages of tool preparation. This is supported by the high percentage of platform-bearing flakes, the low percentage of block shatter and cortex-bearing flakes, and flake size. Most of the flakes are small (0.5 - 1.5 mm) and regularly-shaped. In c.d. 39, a concentration of these flakes was found in association with 2 antler tine flakes. These pressure flakes occur most frequently when a tool is being finished or a completed tool is being reworked.

FAUNAL REMAINS

Faunal material was the most common cultural remain recovered at EdQx 15. Faunal specimens included pieces of bone (94.0%, 88.0%), antler (1.0%, 9.1%), tooth (1.0%, 0.5%), shell (3.9%, 1.2 %), and animal coprolite (0.1%, 1.2%). The figures in parentheses are percentages by count and weight, respectively. Remains were found in every excavated or auger-tested cultural depression except c.d. 28. In addition, faunal material was found in auger tests outside of cultural depressions (area 97) and surficially between depressions (area 99).

In the field, recovered faunal remains were classified as potentially identifiable (as to species or element present) or unidentifiable. Further sorting and preliminary identification was done in the laboratory by Cariboo College student Jerry Pettyjohn. Final identifications were done by Susan Crockford of the British Columbia Provincial Museum. Janice Bryans, a Cariboo College student, assisted in the analysis and preparation of tables.

Tables 15 and 16 give the distribution of faunal material by counts and weights, respectively. Some of the bone counts (Table 15; numbers in parentheses) and weights include mandible and maxilla fragments with imbedded teeth. The tooth count and weight totals are for teeth and tooth fragments not imbedded in their original bone matrix.

TABLE 15.

Faunal counts by cultural depression.

C.D. #	Bone[1]		Antler		Shell		Tooth		Other[2]		Total	
	I[3]	U	I	U	I	U	I	U	I	U	U	U
1	14	97	1	-	-	1	-	1	-	-	15	99
3	1	-	-	-	-	-	-	-	-	-	1	0
7	127(6)	1105	-	-	1	27	4	7	-	-	132	1139
11	10(1)	89	-	-	-	39	-	-	-	-	10	128
19	60	421	2	2	-	69	4	3	-	-	66	495
25	13	73	-	-	-	23	-	-	-	-	13	96
26	9	24	-	-	-	4	-	1	-	-	9	29
27	-	11	-	-	-	4	-	1	-	-	0	16
28	-	-	-	-	-	-	-	-	-	-	0	0
39	166(5)	1422	6	43	3	10	8	15	-	-	183	1490
41	31(4)	380	-	1	-	-	3	2	-	-	34	383
42	2	36	-	-	-	35	-	1	-	-	2	72
45	75(1)	98	-	-	1	5	-	-	-	-	76	103
53	152(12)	1018	-	-	-	-	-	-	3	-	155	1018
97[4]	-	11	-	-	-	1	-	2	-	-	0	14
99[5]	-	-	1	-	-	13	-	-	-	-	1	13
Total	660(29)	4785	10	46	5	231	19	33	3	0	697	5095

1 This includes bone, and teeth in a bone matrix (i.e. mandible and maxilla fragments). The number of items in the latter category are given within parentheses. Isolated teeth and tooth fragments are quantified under "Tooth".

2 Animal coprolites.

3 I = identifiable, U = unidentifiable.

4 Material from auger tests outside of cultural depressions.

5 Surface collected material.

TABLE 16.

Faunal weights(gms) by cultural depression.

C.D. #	Bone[1]	Antler	Shell	Tooth	Other	TOTAL
1	101.6	249.5	0.0[2]	0.3	0.0	351.4[2]
3	0.2	0.0	0.0	0.0	0.0	0.2
7	2484.2	0.0	19.2	6.4	0.0	2509.8
11	147.2	0.0	2.3[2]	0.0	0.0	149.5[2]
19	651.3	106.2	14.3	3.8	0.0	775.6
25	97.9	0.0	2.1[2]	0.0	0.0	100.0[2]
26	13.7	0.0	2.8	0.3	0.0	16.8
27	5.9	0.0	1.2	0.0[2]	0.0	7.1[2]
28	0.0	0.0	0.0	0.0	0.0	0.0
39	1674.1	77.1	5.4	14.0	0.0	1770.6
41	256.8	0.3	0.0	3.9	0.0	261.0
42	22.8	0.0	33.1	0.4	0.0	56.3
45	347.8	0.0	3.8	0.0	0.0	351.6
53	674.7	0.0	0.0	0.0	96.5	771.2
97	1.1	0.0	1.1	0.5	0.0	2.7
99	0.0	238.1	1.5	0.0	0.0	239.6
TOTAL	6479.3	671.2	86.8[2]	29.6[2]	96.5	7363.4[2]

1 Includes bone, and teeth in a bone matrix.

2 Weights are incomplete because some specimens were missing.

The distribution of identified faunal remains is given in Table 17. The counts give the number of faunal specimens present; no attempt is made to ascertain the minimum number of individuals. In most cases, identifications were made to the species level, with a few items identified only to genus. In the preliminary sorting, all fish and most bird specimens were classified as identifiable and have been included in this table, even though identification has not been made beyond the phylum level in most cases.

The faunal remains will be discussed under 4 headings: mammals, birds, fish, and shellfish. Since distributional data is available in Tables 15, 16, and 17, comments will be largely restricted to the type of element present and/or to any unusual or potentially culturally- important characteristic of the faunal collection. Common names will be used; scientific names can be found in Table 17. Terminology follows Schmid (1972).

Mammals

These were the most common faunal specimens recovered. Almost all of the bone, antler, and tooth in the unidentifiable category belongs to the order Mammalia. Most of the fish and bird remains have been placed in the identifiable category.

Deer are the most common identified mammal remain.

TABLE 17.

Distribution (by count) of identified faunal remains.

Common Name	Scientific Name	C.D. #																
		1	3	7	11	19	25	26	27	28	39	41	42	45	53	97	99	Total
1. MAMMALS																		
Elk	Cervus canadensis	2				1											1	4
Mountain Cariboo	Rangifer tarandus				1													1
Bighorn sheep	Ovis canadensis					1												1
Deer[1]	Odocoileus spp.			34	2	10					67	4			31			148
Dog	Canis familiarus			3		1					1	1			44			50
Coyote	C. latrans			1		1												2
Wolf	C. lupus					2												2
Red fox	Vulpes fulva				1						1							2
American black bear	Ursus americanus			1														1
Raccoon	Procyon lotor										1							1
Striped skunk	Mephites mephites				1													1
American beaver	Castor canadensis			1		1					10							12
Snowshoe hare	Lepus americanus										1	1						2
Northern pocket gopher	Thomomy talpoides			1	1						2	2		1	4			11
Western grey squirrel	Sciurus griseus			1							1							2
Mountain vole	Microtus montanus			2	1	2					1	7						13
White-footed mouse[2]	Peromyscus maniculatus			2														2
Western jumping mouse	Zapus princeps											1						1
Northern grasshopper mouse	Onychomys leucogaster											3						3
Cow	Bos taurus			13	1	21						1			2			38
Pig	Sus scrofa			10											2			12
2. BIRDS																		
Birds	Aves			4		2					3			4	1			14
Duck	Bucephala sp.			1											2			3
Canada goose	Branta canadensis			2							1							3
Goshawk	Accipiter gentilis			1														1
Red-necked grebe	Podiceps grisegana					1												1
Saw-whet owl	Aegolius acadicus										1							1
Chicken	Gallus domesticus													4				4
3. FISH																		
Fish	Pisces	13	1	52	2	23	13	9			90	14	2	66	47			332
Salmon	Oncorhyncus sp.														13			13
Spring salmon	o. tschawytscha														9			9
Sucker	Catostomas sp.			2														2
4. SHELLFISH																		
Freshwater mussel	Margaritifera margaritifera			1							2							3
Freshwater mussel	Anodonta grandis										1			1				2
	Total	15	1	132	10	66	13	9	0	0	183	34	2	76	155	0	1	697

1 Primarily mule deer (O. hemionus hemionus).
2 or Cascade deer mouse (P. oreas).
3 or Aechmophorus occidentalis.

Most of these specimens are mule deer, but 2 white-tailed deer specimens were found in c.d. 39. Over 90% of the deer remains are leg elements, most commonly autopodials. In c.d. 53, 3 sets of articulating carpals with broken proximal metacarpals and/or distal radii fragments were recovered. Two were from mature animals; the third was from an immature specimen. It appears that the lower legs were discarded after the long bones were broken to extract the marrow. Phalanges are not present, possibly because they were also a good source of marrow.

In c.d. 7, rear leg bones were the most common element. The epiphyses have not fused on many of the bones, suggesting a heavy reliance on immature animals. Phalanges were common in the c.d. 7 sample in contrast with c.d. 53.

C.d. 39 had the most varied assemblage of deer remains, mostly from mature animals. These included: front and rear leg elements; skull fragments, including teeth; scapulae fragments; part of a vertebral spinous process and a rib; and antler. Some of the antler had been used for flaking stone tools. The presence of skull fragments and teeth in c.d. 39 and in several other depressions was unexpected as ethnographically cranial bones and mandibles were left at the primary butchering location, usually the kill site.

Three other ungulate species were noted: mountain

cariboo, bighorn sheep, and elk. Mountain cariboo is represented by only one faunal specimen, a proximal rib fragment. Although this animal did appear in this area, this identification should be viewed with some caution because of the small sample size and the poor condition of the specimen. Similarly, the bighorn sheep specimen, a lower, deciduous premolar, has not been identified conclusively, and may even be from a deer. The elk remains consisted of 2 pieces of antler, a scaphoid, and a rib fragment. The antler was utilized for wedges and is described in the Artifact section.

Remains from 7 carnivore species occurred at EdQx 15. These included 4 canids (dog, coyote, wolf, and red fox), American black bear, raccoon, and striped skunk. The most frequently occurring carnivore remains were dog, mainly from c.d. 53. These were primarily autopodials from both mature and immature animals. Included in the c.d. 53 total are 3 dog coprolite specimens. Since this depression functioned as a refuse pit (see appendix II), the coprolites could be the remains of viscera discarded into the pit. Other canid bones included: 2 right metacarpals from a coyote; a vertebra and a right ulna fragment from a mature and immature wolf, respectively; and 2 right humerii from a mature red fox.

The single black bear specimen has been described

thoroughly in the Artifact section. It is a baculum fashioned into a pin with incised decorations. Other carnivore specimens include a right, front 4th metacarpal from a raccoon or a striped skunk, and an axis vertebra from a striped skunk.

The only representative of the order Lagomorpha is the snowshoe hare. Two specimens were found: a left femur, broken distally, from c.d. 39, and a right pelvis from c.d. 41.

Several rodent species have been identified from this site. Most of the gopher and mice remains are probably natural deaths, and were not culturally deposited. This is likely the case for: northern pocket gopher, mountain vole, white-footed mouse, western jumping mouse, and northern grasshopper mouse. The 4 pocket gopher specimens in c.d. 53 are indications of the extensive disturbance this species has caused to this site.

Beaver remains occurred most frequently in c.d. 39. Specimens from this depression include: 2 caudal vertebrae, possibly from the same animal; a left ulna, tibia, and femur; a right humerus; a 4th and 5th left metatarsal; a rear phalange; and an incisor. The tibia and femur are from immature animals with the tibia broken proximally and the femur represented by only the distal epiphysis. The ulna and humerus are from a mature animal; the humerus is complete

while the ulna is broken distally. The metatarsals are not from the same animal as they represent both a mature and an immature individual.

The incisor was used as a gambling die and is described in the Artifact section. Six of the 10 c.d. 39 specimens have been identified as male, the remainder were not sexed. The other 2 beaver remains are a tooth fragment from c.d. 7, and, from c.d. 19, the proximal end of a right metatarsal from an adult male.

Cow and pig remains were found in several of the cultural depressions. These are the result of Historic period activities, and are not related to the prehistoric aboriginal occupation.

Most of the cow bones in c.d. 7 are from the south part of the depression where a calf had been interred and covered with earth (Fig. 12). Only the skull and atlas and axis vertebrae were exposed during excavation.

C.d. 19 yielded the most cow specimens. These were primarily front autopodial elements from a calf. One mature specimen was sawn, an indicator of modern butchering.

The pig bones in c.d. 7 are from at least 3 immature animals, possibly even foetal or new born. Two pig specimens, both immature vertebrae, were found in c.d. 53. It is possible that these are intrusive from c.d. 7 as c.d. 53 is an "undisturbed" prehistoric pit feature. Similarly, the

context of the 2 cow specimens from c.d. 53 must also be questioned.

Birds

There were a total of 27 bird specimens in the identified faunal remains category. Fourteen of these were not identified beyond the phyllum level. The remainder came from 6 different species.

Two of the specimens were birds of prey: the goshawk and the saw-whet owl. Waterfowl accounted for 3 species: Canada goose, red-necked grebe, and a goldeneye or bufflehead duck. The small sample of waterfowl makes it difficult to comment on seasonality.

There were 4 chicken bones recovered in c.d. 45. These consisted of 2 thoracic and 1 axis vertebrae, and 1 left tarso-metatarsus. All of these are from an immature animal and are indications of the Historic period disturbance of this depression.

Fish

Fish remains were bagged separately in the field, and have been quantified as identified faunal remains (Table 17). There are 356 specimens but only 24 of these have been identified to the genus or species level. Over 85% of the total fish specimens are vertebral centra. Other remains

include facial bones, gill plates, and vertebral spinous processes.

Two of the identified species occur in c.d. 53. This is a refuse pit, rather than a food storage feature, implying that the vertebral columns were discarded. The identified specimens are 9 caudal vertebrae from spring salmon and 13 abdominal vertebrae from an unidentified salmon, possibly sockeye.

Shellfish

Shell fragments were located in all of the excavated or auger-tested cultural depressions, except for c.d.s 3, 28, 41, and 53. The largest quantities occurred in c.d.s 7, 19, and 42. Two species of freshwater mussel were identified: Margaritifera maragaritifera and Anodonta grandis.

Ethnographically, shellfish was not a popular food item. Teit (1909:513) has stated that shellfish was only eaten during times of famine. Archaeologically, shellfish are more common in "older" sites (Blake 1973), decreasing in the Thompson and Kamloops phases.

BOTANICAL REMAINS

Botanical remains were recovered while excavating and auger testing. No special techniques were used to recover this material. The distribution of identifiable specimens is given in Table 18. The botanical samples have been categorized according to the part of the plant that is present.

The 19 stem samples are all pieces of wood, mostly from coniferous trees. Seven of the better quality wood samples have been identified by Stan Rowe of Forintek Canada Corporation in Vancouver. There are 3 Douglas-fir specimens, one each from c.d.s 1, 3, and 39. The remaining identified samples--2 from c.d. 7, one from c.d. 25, and one from auger test 17 (area 97)--were pine species, either lodgepole or ponderosa. Ethnographically, the wood, bark, and cones of the ponderosa were used as fuel (Turner 1979:108), whereas the lodgepole pine was a source of poles (Turner 1979:104). Today, ponderosa pine occurs in the lower river valleys while lodgepole pine is obtainable at higher elevations.

The 32 bark samples were examined by Stephen Lawhead and Arnoud Stryd. There are 31 birch and 1 ponderosa pine specimens. The birch was often fire charred and occurred as small fragments and bark rolls. Birch bark was an important resource and was used for baskets, food storage, lining pits, splinting limbs, binding implements, and roofing

TABLE 18

Distribution of identifiable botanical remains.

C.D. #	Stems	Bark	Seeds	Buds	Fruits	Other[1]	Total
1	6	2	0	0	1	0	9
3	1	0	0	0	0	0	1
7	2	7	0	0	0	0	9
11	2	3	0	0	0	1	6
19	3	3	0	0	2	0	8
25	1	0	0	0	0	0	1
26	2	1	0	1	0	0	4
27	0	7	0	0	0	1	8
28	0	0	0	0	0	0	0
39	1	8	1	0	2	0	12
41	0	0	0	0	1	0	1
42	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0
53	0	1	0	0	0	0	1
97	1	0	0	0	0	0	1
99	0	0	0	0	0	0	0
Total	19	32	1	1	6	2	61

[1] This category contains 2 fungii (puffballs).

(Turner 1979: 195-199). It may also have been used as punk to keep fires alight.

The seeds, birds, and fruits from EdQx 15 are being examined by Dave Williams, botanist at Cariboo College. Species identification has only been done for the poplar bud scales from c.d. 26. The remainder, consisting of one seed and several fruit capsules, have not yet been identified.

The remaining items, 2 puffballs, were identified by Williams. These fungii were not eaten and were viewed superstitiously by the indigenous peoples (Turner 1978:40).

FIRE-ALTERED ROCK

The amount of fire-altered rock recovered from each excavated cultural depression is given in Table 19. To make comparisons meaningful, the amount of fire-altered rock per cubic meter (m^3) of excavated sediments has been calculated. Totals are not given for c.d. 41 because of incomplete field data.

The highest concentration of fire-altered rock is in c.d. 7, with almost 8,000 gm per m^3 of excavated sediments. This figure is misleading, however, as 11,500 gm were contributed by feature #4. If the feature #4 total is not considered, the revised value is 4,938 gm per m^3, close to the site mean of 4,450 gm per m^3.

Similarly, the value for c.d. 1 is affected by a concentration of fire-altered rock on the pit edge. The revised figure, excluding this concentration, is 1,645 gm per m^3, one of the lower values obtained. C.d. 1 is a refuse pit as are c.d.s 42 and 53. The latter 2 have moderate amounts of fire-altered rock, although most of the c.d. 53 rock was near the top of the pit.

The mean value for depressions associated with Kamloops phase habitations (c.d.s 7, 11, 19, and 39) is 5,796 gm per m^3. For Thompson phase habitations (c.d.s 25, 26, 27, and 45) this value is only 1,540 gm per m^3. This difference seems significant and could reflect

TABLE 19

Distribution of fire-altered rock.

C.D.#	Fire-altered Rock (gm)	Fire-altered Rock (gm/m^3)[1]
1	5,442	3,488
7	30,315	7,957
11	11,600	4,462
19	19,762	6,062
25	0	0
26	270	193
27	4,125	3,750
39	25,784	4,596
41[2]	---	---
42	1,540	3,208
45	4,691	2,234
53	3,250	4,577
Total	106,779	4,450[3]

1 The number of grams per m^3 of excavated sediments.

2 Data is incomplete for this depression.

3 Site average.

different activities within the depressions. Alternatively, the Kamloops phase depressions may have been occupied for longer periods of time. It should be remembered that these values are not the result of randomly placed excavation units, and comparisons of data should be viewed with caution.

FEATURES

This section considers the subsurficial cultural features which were encountered during excavation and auger testing. Surficial features are excluded from this discussion. Of course, the subsurficial features were often related to surficial features. As would be expected, this relationship occurred commonly between pit features and surficial cultural depressions. A thorough description of all the subsurficial features can be found in appendix II. Their distribution is given in Table 20.

There are at least 3 kinds of pit features recorded: (1) house pits, (2) refuse and/or storage pits, and (3) hearth or oven pits. House pits are usually associated with the larger surficial depressions, although at this site these depressions are often levelled. House pits were only recorded as features when well-defined wall or floor areas appeared. The refuse and/or storage pits are smaller pit features containing discarded (or stored) food remains and other debris with very few artifacts. The hearth or oven pits contain fire-altered rock, ash, and charcoal in varying amounts. In c.d. 41 a small pit containing only fire altered rock was encountered. This suggests a possible fourth kind of pit feature, the sweat lodge, which c.d. 41 may have functioned as at one time.

Rock features are non-random concentrations of rock

TABLE 20

ribution of features.

C.D. #	House Pits	Refuse and/or Storage Pits	Rock Clusters	Rock Hearths, Ovens, or Scatters	Ash Hearths	Posts	Post Holes	Total
1		1		1				2
3	1?[1]							1
7	1	1	2					4
11	1							1
19	1							1
24	1	1						2
25	1	1						2
26	1							1
27	1							1
28	1?							1
39	1			1	1	1?	1?	5
	1?		1	1	1		1?	5
42		1						1
45	1							1
46				1				1
53		1						1
Total	12	6	3	4	2	1	2	30

1 Question marks imply that the feature is tentative.

within a well-bounded area. They have been divided into rock clusters, which are compact rock concentrations, occasionally fire-altered but associated with very little charcoal and ash, and rock hearths, ovens, or scatters, which contain more widely-distributed fire-altered rock usually associated with significant quantities of charcoal and ash. Two of the rock clusters occur in small pits. Although minimally fractured, these rocks do exhibit some heat modification. The function of the rock clusters is not known, although the cluster in c.d. 41 may have been the heat source for a sweat lodge. The other type of rock feature may represent hearths, ovens, or discards from either of these. Ash hearths, another feature type, were also fire produced, and were found in c.d.s 39 and 41. Like rock hearths these contain ash, charcoal, and burnt sediments, but lack significant quantities of fire-altered rock.

There were very few well-defined posts or postholes. The lack of posts could be due to poor preservation. In addition, the sediments at EdQx 15 are loose and sandy and posts removed from the ground leave very poorly-defined post holes. This phenomena has been discussed for c.d. 7 in appendix II. Finally, the rectangular depressions may have had light, pole superstructures with mat coverings. These portable roofs would leave little archaeological evidence.

HUMAN REMAINS

The only human remains which were encountered consisted of 4 skull fragments from one individual. The wellfused sutures on one of the fragments indicates that these are from an older adult. The bones were surface collected from just east of the mobile home pad (Fig. 2). Informants and local collectors had no recollection of human remains being found at this site in the past, although burial cairns have been reported from along the river bank just east of the site.